S. HRG. 110–602

# WORKSHOP ON OIL PRICES

# WORKSHOP

BEFORE THE

# COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

ON

WHY OIL AND TRANSPORTATION FUEL PRICES AND THIS WINTER'S EXPECTED HOME HEATING FUEL PRICES WILL BE SO HIGH, AND WHAT CAN BE DONE TO ADDRESS THESE SITUATIONS

JULY 17, 2008

Printed for the use of the
Committee on Energy and Natural Resources

U.S. GOVERNMENT PRINTING OFFICE

45–336 PDF WASHINGTON : 2008

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

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# WORKSHOP ON OIL PRICES

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**THURSDAY, JULY 17, 2008**

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
*Washington, DC.*

The committee met, pursuant to notice, at 9:05 a.m., in room SDG–50, Dirksen Senate Office Building, Hon. Jeff Bingaman, chairman, presiding.

## OPENING STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM NEW MEXICO

The CHAIRMAN. Why don't we get started? Let me welcome everybody.

This is being held in the nature of an oil price workshop to talk about two issues, the way I see it: first, the high price of oil and the resulting high price of gas at the pump, which people are faced with today; and second, the high price for heating fuel which we are seeing and which we are expected to see more of as we get closer to the winter, particularly natural gas, propane, home heating oil.

I think we are all aware. All of us hear from our constituents about the enormous burden that this is on families throughout the country, these increased prices and the dramatic increase in prices that they have faced in recent months, that we have all faced. Also, the burden that this is putting on our economy is obvious, and I am sure we will hear some about that.

The question that we are going to try to grapple with here for the next few hours is what are our realistic options for dealing with these very real problems. My own view is that we have had a lot of political statements. We have not done enough perhaps to actually debate the real issues and what concrete actions could be taken that would have an impact that was positive for the American people.

Three areas that we have all, I think, begun to focus on. One relates to the functioning of markets, the whole issue of speculation, the extent to which that is a factor in explaining, causing the high prices. Second, what could be done to further reduce demand. Are there steps that we could take as a policy matter in that regard? Third, what could be done to increase supply. I think those are three large areas that I continue to hear about, and I am sure some of you may want to add to that list.

My sense is that the way forward will involve actions that the President and the Administration can take. Let me just mention and congratulate the BLM on the action they announced yesterday to have a large oil and gas lease sale in the northeast portion of the National Petroleum Reserve, Alaska. I think that is positive, and I compliment them on that announcement. So there are actions the Administration can take.

There are actions that Congress can take, and of course, that is the purpose of today's workshop, is to explore those actions. One of those, of course, is the bill that Senator Reid is bringing to the Senate floor today and will be the subject of a lot of debate on the Senate floor, I am sure. Perhaps our colleagues or our witnesses will have some comments on the value of us trying to address this issue of speculation.

Then the third area is actions that the American people can take to help with this problem. Of course, most of that falls in the area of reducing demand. I think there has, obviously, been a substantial reduction in demand that has already been reflected in statistics, but there may be a additional steps that can be taken there.

So those are the subjects that I thought it would be useful to address.

Let me just say something about the procedure and then defer to Senator Domenici.

I think the way we were planning to do this, we have two excellent witnesses here, Dr. Yergin and Mr. Diwan, who are here to speak as experts. We are asking them to each take about 10 minutes, give us their ideas as to the causes of the current high prices, and their recommendations for actions we ought to take.

After they speak, I was hoping to ask a few questions. Senator Domenici may have questions as well, and then we open it up to everybody here just on a first come/first serve basis. Whoever has a question or a point of view or something they want to say, we are glad to hear it.

So let me defer to Senator Domenici at this time.

## STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR FROM NEW MEXICO

Senator DOMENICI. Senator Bingaman, first of all, you and I get to hear each often and we get to talk a lot. I hope we will hear from some others and I hope that perhaps we will hear less from you and I, not that we do not have a lot to offer, but we do get to talk about this subject frequently.

I thank the two expert witnesses for coming.

A little later on in the program, I will submit just a few quotes from experts of their caliber who have clearly said that the problem we have got with price is supply and demand. Yet, it seems like there are those who continue to think that we are going to fix this problem some way by a bill that the majority leader has in mind that has to do with speculation. I am perfectly willing, as one Senator—and I say that to Senator Bingaman right now—to consider legislation regarding the issue that I have just described.

But I frankly believe that there is no question that we have a rare opportunity to share with the world some increased production potential of a pretty large dimension as a result of the offshore potential of the United States. With only about 15 percent of that offshore having been put up for lease, with almost 85 percent—not all of it is great oil production property, but 85 percent not used, it seems to me we ought to be in a bipartisan mode sitting at a table and hand in hand trying to figure out how we get to a point where we can start to maximize the use of that great asset which we have before us which we have not used for 27 years. I mean, it is something to lock up an asset for 27 years and find out, all of a sudden, that the American people have found it along with us, and that we have got to do something about it.

I hope we hear today about that, and I hope Senators express themselves on that subject.

I for one introduced a bill 3 and a half months ago. I think many of you know about it. I believe if that bill would have been adopted or would be adopted now, that it would make a dramatic change in the way supply and demand came out in terms of the United States versus the assets that we own in the offshore that belong to our people.

With that, I would like to put my statement in the record and say that I hope to learn from these experts whom I have read about and whom I think have stood pretty stalwart for the proposition that supply and demand is the problem that is affecting the price of oil and ultimately the price to consumers more than any other single thing. I thank them for all they have contributed, and I hope to hear more from them today.

Thank you, Senator Bingaman.

The CHAIRMAN. Thank you.

Our witnesses are Dan Yergin who is the chairman of the Cambridge Energy Research Associates who is a frequent testifier before our committee and many congressional committees. We, obviously, welcome him back. Roger Diwan, who is a partner and head of Financial Advisory, PFC Energy. We very much appreciate you being here as well.

So why don't you go ahead and go in that order, unless you have a reason to go in a different order, and give us your thoughts. After we hear from both of you, we will begin some questions.

## STATEMENT OF DANIEL YERGIN, CHAIRMAN, CAMBRIDGE ENERGY RESEARCH ASSOCIATES

Mr. YERGIN. Thank you, Senator Bingaman and Senator Domenici. I am very pleased to be here to participate in this workshop, a very constructive way to try and address these basic questions. So I hope in my few minutes here I can provide a little bit of a framework for the discussion that will ensue over the next couple of hours.

Obviously, the very fact that we are together shows the concern. There is no question as a country and as a world that we are living through an oil shock right now with tremendous impacts around the world.

I think also, as suggested, we are, we might say, at a break point in terms of which we are starting to see some major changes which will play out over the next few years.

I think, Senator Bingaman, your emphasis on energy efficiency, that that is one of the three things that we really need to focus on, is very much to the point.

I will say a few words about how we got here and how we might get out of here, but I would want to say, in terms of policy, it seems to me as a country we need to get kind of beyond this either/or energy debate and instead take a sort of more ecumenical approach that recognizes the critical requirements of supplying energy to our $14 trillion economy.

The second is to recognize that we really do have an investment problem in energy and we are playing a game of catch-up right now.

The third is talking about the response of markets.

The fourth, over the last several months, I have become persuaded that expectations about what is going to happen 3 to 5 years from now are really having a very important impact on price formation.

That we are in an oil shock is completely clear. It coincides with the credit crisis. That is why people, for the first time since the 1970s, are talking about stagflation again. That concept was supposedly banished after the 1970s. We hear predictions of $200 or $250 a barrel oil. So it is quite appropriate to ask what is happening and why is it happening.

There is a tendency always to try and find a single explanation, but for something this complex, I think there is not a single explanation. A lot of things have come together, and to kind of make sense of it, I would like to sort of suggest the heading of the traditional fundamentals and the new fundamentals.

The traditional fundamentals are what Senator Domenici referred to, supply and demand, basically the success of the global economy, 5 years of the best economic growth that we have had in a generation and rising incomes means rising energy consumption. Just one set of numbers shows between 1998 and 2002, world oil demand increased by 4 million barrels a day. Over the next 5 years, it increased by 8 million barrels a day, and that was because of economic growth. So as a result of that, we are in a tight supply/demand. Lead times in the energy industry are long. Things do not happen overnight.

But you might ask, well, why are things not happening faster? There, I think, are three big reasons for the rather slow supply response. One is the question of access around the world to areas for development. The second is the uncertainty about investment, fiscal, regulatory regimes again around the world. The third is something I will come back to, the shortage of people and equipment.

I think the other major traditional fundamental is the familiar one of geopolitics. We have not had a mega-disruption like the 1970s. But when you add it up, there are 2 million or 3 million barrels a day that are missing, and you start with Nigeria where, at some points, up to 40 percent of Nigerian supply is out. That is one of our major sources of imported oil. You can just go down the list of Venezuela, Iraq, Mexico, Russia, and you see this adding up of missing supply. When you have a tight market, it is vulnerable to the impact of disruptions. It is vulnerable to price.

I think there is no question that the dangers and uncertainties related to Iran's nuclear program are a distinctive part of the oil market today, and there is clearly an Iranian risk factor in the price of oil today.

So those are the traditional fundamentals.

When I say the new fundamentals, what are they? I think there are two. One is this doubling of cost. Today if somebody goes out and wants to develop a new oil field, you are going to budget it at twice what you would have budgeted it at just 4 years ago. It is a shortage. We created what we call IHS/CERA Upstream Capital Cost Index, and it shows that in fact, it is actually something over a doubling in the last 4 years. So that means every dollar only buys you half as much as it would have done 4 years ago.

What is the reason? It is the shortage of engineers and scientists, labor, equipment, steel, commodities. Right now we are actually—although we talk about the oil shock, there is a steel shock going on. Since the first quarter of this year, steel prices globally have gone up 40 percent, and that again goes into the costs of development.

So all these costs are up, and that then leads to delays, postponements, in some cases cancellations. In other words, we can think there is a supply issue and then there is the supply chain. It is these issues about the supply chain that are a part of the delay in terms of response. New equipment, new petroleum engineers get trained, all of that happens, but it does not happen overnight.

The other issue—and this is one that is obviously very much on the minds of all the Senators here—is what we might call oil is the new gold; that is, oil is a storehouse of value. Increasingly the fact that oil, along with other commodities, has been seen as an asset class by financial investors as one that is not connected to what happens to equities, bonds, and real estate. It has always been there, but I think only in the last few years has it really emerged on the scale that we have seen.

None of you need to be told that the role of financial markets in the oil price is a very controversial subject and the range of views is from that speculation is the heart of it to that it is all about supply and demand. I am struck by the fact that when we use the word "speculation," it has so many different meanings. There is a technical meaning of those who provide liquidity in a futures market. It can suggest manipulators. It can suggest risk takers. It can suggest irrational exuberance. I think that the effort to get much more transparency and knowledge about the financial markets, whatever your point of view, is a very important part of this dimension.

But it is worth considering that people have all different reasons as financial investors to be investing in commodities like oil. It is a hedge against risk. A pension fund might want to do it to hedge their portfolio against a conflict in the Middle East. There is a shortage psychology that the world is running out.

I think what has happened with the dollar, particularly since last July, has had a big impact, and the U.S. credit crisis is part of why we have seen commodity prices high. So it is ironic to think that the crisis that started in the subprime mortgage market in the United States has traveled around the world and, through the medium of a weak dollar, has come back home to Americans in the form of high prices at the pump.

The second point I just wanted to say is that we are at a break point I think. About 2 years ago, we did a scenario paper we called Break Point, oil getting to $120 to $150 a barrel. I think at that time most everybody, including us, would have put about a zero probability on it happening. But the question is what happens when you get to that level, and I think we are seeing it in terms of technology and the dramatic change particularly in what is happening in the focus of the transportation and the automobile industry. In fact, last year, we probably had peak demand in terms of gasoline in the United States. It is probably going down.

The third point—and Senator Bingaman emphasized this—is we have a tremendous potential for energy efficiency, both short- and long-term. The U.S. has double its energy efficiency since the 1970s. Over the next couple of decades, why can we not double it again? I also wonder, in terms of a much more concerted in terms of communication, whether we could save 600,000–700,000 barrels a day in gasoline with no discomfort to the American people through shaving, minor changes that people would make, and that would make a difference in the market.

So I think the question, Senator Bingaman, you had in your speech yesterday, why is this not more highly focused upon, I think is a very appropriate question.

So in terms of just conclusion on policy, as I said, I do think we ought to really avoid the either/or. We kind of do need everything. Renewables will become more important, but as they become more integrated into the existing energy infrastructure, it raises questions about how they get integrated into it. In the meantime, we look at, as I said, our $14 trillion economy. How do we run it? How do individuals, how do families continue to pursue their lives and their careers in that energy is central to it?

I think the second question is encouraging timely investment, and that is an issue not only in the United States, but around the world. It is a vigorous game of catch-up. I think it needs to be thought of in terms of our overall foreign relations. The United States played a critical role in the 1990s in terms of getting the Baku-Tiblisi-Ceyhan pipeline built, which brings 700,000 barrels of oil now to the Mediterranean. I think we ought to be asking where else in our foreign policy could we do things that would enhance supply.

I think maybe it is just one of the concluding points. It is striking that we are both more integrated into the global energy marketplace than we have ever been before, and at the same time, we have less leverage over that marketplace because our share of the market has gone down. National oil companies really have the dominating position now, with over 80 percent of world reserves. The five super majors account for less than 15 percent of production. China and India are becoming more important. All of this emphasizes the need for a cooperative, multifaceted approach to relations with other producers and certainly with other consumers.

I think the last point I would just like to make is about expectations. As I said at the beginning, it seems to me that this tight market and concerns about Iran are two of the principal things in the price today. But there is this shortage psychology, a belief in two things: one, that demand is going to go through the roof in 4 or 5 years, looking at China; and second, that there is going to be a physical shortage in 4 or 5 years. I think that is particularly strong in the markets, and things that are significant get discounted like these very large discoveries off the coast of Brazil, which are perhaps equivalent to a new North Sea. People do not pay attention to those. So I think thinking about expectations and their role on price would be constructive today.

As I said, avoiding either/or, new supplies, renewables, greater efficiency, all of those come together. All of that would be a great contribution to reducing the pain and pressures that Americans are feeling at the pump and the difficulties faced by American businesses, small and large alike. I think this would be a fundamental contribution both to the prosperity of our Nation and to the prosperity of the global economy, of which we are such a central part.

Thank you.

The CHAIRMAN. Thank you very much.

Mr. Diwan, why do you not go right ahead?

**STATEMENT OF ROGER DIWAN, PARTNER AND HEAD OF FINANCIAL ADVISORY, PFC ENERGY**

Mr. DIWAN. Thank you for inviting me this morning. I would like basically not to repeat a lot of what Dr. Yergin has said because I agree with a lot of it, but really focus on a few points I think which could help us dive more into the subject. I would like, anyway, to provide a more detailed framework to understand price formation and how we got to $135–$140 oil.

I think the important moment is really what happened between 2003 and 2005 where really the world faced two shocks, a supply shock and a demand shock at the same time, a supply shock where we had what were called rolling supply disruptions between Iraq, Venezuela, and Nigeria, which basically rolled on for a number of years and removed a lot of oil from the market. At the same time, we had this incredible demand surge not only in the emerging world but also, in the early part of this period, in the United States. These two shocks together have wiped out all the spare capacity which existed in the world.

Basically between 1985 and 2005, OPEC had a lot of capacity which was unused. That unused capacity waited on the market. There was no reason for prices to increase because every time prices increased, OPEC added barrels on the market. By 2004–2005, that spare capacity basically resided only in one country. All the other countries were producing at full capacity, and there were not any more members of the cartel, if you want. They were like any other producers. Only Saudi Arabia had spare capacity, and that number is open to debate. Saudi Arabia says it is around 2 million barrels per day, and let us assume it is 2 million barrels per day.

When you have a market without spare capacity, we discovered that it works very differently because you have really risk only on the upside. You do not have down-side risk. You have fears of more supply disruption, fears of fields not coming on line, delays, et cetera. So suddenly the balance, when you are looking at oil prices, the chances that they would go up versus going down, is really skewed toward 90 percent going up. That has created, if you want, a lot more investment into the commodity directly.

So this is the moment where you start to see the financial industry start to get interested in the commodity. Before that you had too much of an OPEC risk, if you want, that you would invest in and one OPEC country would do something and you would lose your money. That risk was too big.

So that skewing of the risk on one side started to build up. Clearly the fundamentals were right, and that is really the core reason where we are here.

But over the next few years, basically between 2004 and now, something which is very important happened in the market. In a way, Dr. Yergin talked a little bit about it. I would like to focus on it, which is the supply narrative. We do not have enough supply. There is not enough oil coming on line. Projects are always delayed. Access is completely closed. It is true, over the last 4 or 5 years, we have seen non-OPEC supply being very, very sluggish and barely increasing every year. That has created more and more talk about peak oil, especially in the non-OPEC area. Often these issues are misunderstood and put in fairly simplistic terms, but there is a clear concern here that supply is not rising on a global basis from non-OPEC. The only places where really we are investing in a massive way is places like Brazil or like Saudi Arabia right now.

That supply narrative has changed the expectation, and this is why around the middle of 2006, you saw the long-term price expectation rise suddenly from $40 to $100, where suddenly the market started to price scarcity in the future. The scarcity narrative is extremely important to understand why you have financial players coming into the market. So the fundamentals have driven, if you want, what I call the financialization of oil markets. Suddenly when the financialization of oil markets—now oil is a financial asset. It is not anymore really purely a fundamental supply and demand play.

In this environment, really you ended up with what I describe to my clients as really two set of news. You have the bullish news and prices will go up or the very bullish news where the price goes up very much. The market is only attuned to these types of news. You know, something happened off the coast of Brazil or a new field comes on line, it is completely discounted. The news which are counted on are only the ones which reaffirm your belief that we have a problem in the future, that demand is really rising very fast in China and the Middle East, that prices are not having an impact, and supply is not coming on line.

That takes us to the next phase really where sometime early in 2006 suddenly oil has really become a financial asset, and it has almost left the supply and demand fundamentals because a lot of the players and the majority actually of the players on the futures markets are financial players. They are not what we call commercial players, airlines, oil companies, et cetera.

In the data that CFTC released a few weeks ago where they really broke down a little bit the players, what you realize is the commercial players, oil companies and airlines, people who physically buy and sell oil, represent something like 27 percent of the market right now. The rest is what you would call speculators, what I would call investors, if you want, where they decided that oil is an asset class and they are making constant arbitrage between the dollar, between inflation rates, between the expectation of different assets, and they are making portfolio assignments. They decided how much money they want to go into a commodity versus into dollars.

The correlation is extremely strong, and Dr. Yergin alluded to that. But think about it. Between July and now, the negative correlation between oil and the dollar is something in the order of above 90 percent. So the primary driver of oil prices over the last 9 months has been the dollar value. It is people deciding to hedge their dollar, if you want, with oil as they do with gold and other commodities. The problem is oil is a small pool compared to the very large pool of money which is the dollar. The way I describe that you have a very large lake which is overflowing into a very small pond. This is the money flowing to the small pond, the small pond being the oil market.

That notion that oil is an asset class—now you see it every day. I mean, when you look at the daily movement in oil prices, you cannot relate them to any fundamentals event. You can very often relate them to what I call the macrofundamentals, the dollar, the inflation expectation, what the Fed is doing, what the ECB is doing, et cetera.

How did we get there? How come the financial players have taken over this market and represent really the largest section of it?

In a way, what happened is we had a tight regulatory environment to allow or not allow financial players to come into the commodity market, but in a way we closed the door on that years ago. Sometime 10 years ago, we kind of opened the window, and they came back through window. What I call the window is the ability for index funds to be linked to commodities and bring money which is basically not regulated by the exchanges, where you do not have really position limits.

So you talk to endowments, pension funds, I mean, probably all our pension funds here are now putting money in oil commodities rather than what they used to do in the past to put it in the equity and the stocks of the oil companies because it correlates in their portfolio. So they are making big bets and they are trying to basically hedge our pensions mostly for the decline of the dollar. We have allowed them to do that.

The question is should we allow them to continue doing that or should we limit their ability to do that? Should we have them come back, if you want, in the regulatory environment which we had in the past, that each institution has a limited amount of commodity it can buy or not? Those are important questions.

Obviously, they do not obviate the root cause of the issue here which is tight supply and demand where we still have demand growing at $140 oil and supply is not coming on line. In an environment where supply is not coming on line on $140 oil, the only way you can bring things in balance is push prices to the limit until you break demand. The reaction is coming from the demand side, not from the supply side in the short term, if you want. So the players keep pushing prices up until you break down demand.

We are starting to see that in the U.S., but we do not see it on a major level globally. We still have good product demand growth between the Middle East and Asia, and that is keeping the supply balance very tight.

So that is what I have to say today, and thank you for giving me the opportunity.

The CHAIRMAN. Thank you very much. I thank both of you for your excellent testimony.

Senator Reid is here I see, and maybe before I ask any questions or Senator Domenici does, did you have any statements you wanted to make or any questions?

## STATEMENT OF HON. HARRY REID, U.S. SENATOR FROM NEVADA

Senator REID. Mr. Chairman, I appreciate it very much. The Senate opens at 10 o'clock and I have to be there. So I appreciate very much you and Senator Domenici allowing me to say just a few words about this most important discussion that you are leading here today.

With gas and oil prices setting record prices almost every day, it is clear that the American people are suffering and deserve our attention and hopefully some solutions. If there is one magic pill that will bring energy prices back to sanity—there is not one. Of course not, but I am hopeful and confident that if we cast aside partisan divide that has enveloped Washington, we can begin to stem this growing crisis.

The issue spreads far wider than the reach of the Energy committee alone. It is fair to say that nearly every committee here in the Senate has a piece of this intricate oil and gas puzzle, whether it is speculation, the weak dollar, political instability in the Middle East, growing cleaner, more affordable alternative fuels, tax incentives, increasing the efficiency of our transportation sector. So I am sure that other committees will follow your lead—or at least I hope they do—Mr. Chairman Bingaman, to join the process of finding cost effective, sensible solutions to our dangerous addiction to oil and the high oil and gas prices that are crippling our economy and affecting the world economy.

The crossroads of record prices and every-increasing global demand for oil has brought our Nation and the world to a crossroads we knew would come 1 day. For America, the yawning gap between our meager petroleum resources and our enormous dependence on consumption of oil has caught up with us. We cannot continue forever to consume 25 percent or more of the world's oil when we have less than 3 percent of the world's supply. It is just simple math.

With the many regionally based energy interests in our country, moving Congress toward a cleaner and safer energy future has never been easy. That critical task has been made more difficult in my opinion with a President that has not shown the necessary leadership to end our addiction to oil and move toward clean renewable fuels.

That said, we did make progress last year, bipartisan progress. Was it enough? Of course not, but it was some progress. We worked to pass last year's landmark energy bill which moves us slowly in the right direction. We all know that that bill is only a small down payment on the transformation that must take place if we are going to meet the urgent economic, national security, and global warming challenges that we cannot afford to ignore any longer.

So I hope today this event—and I am confident it will bring forward new ideas, sensible ideas that can help relieve the enormous burdens of high gas prices on consumers in the near term and the long term.

It was just a few weeks ago that I was here testifying, and I looked next to me and there is T. Boone Pickens, one of my mortal political enemies for all these years. Suddenly because of what I had heard on public radio that morning, I realized he had become my political friend because here is a man who not only has helped us recognize there is a problem, but he is focused on a solution. I am so appreciative of T. Boone Pickens. He is an oil man, a staunch conservative, but he realizes the enormity of our energy crisis. That is a pretty good model for the kind of bipartisanship it will take to solve this problem.

This week I have introduced one solution on the Senate floor, I hope, legislation to stem the excessive speculation in the energy markets that many economists believe accounts for 20 to 30 percent, or more some say, of the price we pay at the pump.

Eighteen years ago the Commodity Futures Modernization Act for the first time created a whole new class of traders to enter the commodities market without the same constraints faced by people trading in the actual physical commodities. Because of this new law—a mouse click—the energy market was born overnight. That means that right now Wall Street traders can raise oil and gas prices simply by logging onto their computers and executing trades without regard for anything but their own profits. Traders are bidding up prices by buying huge quantities of oil just to resell at an even higher price. The result has been a new class of investor getting rich by buying oil, only to turn around and sell it at an ever-higher price, only to stick consumers with the bill, never, ever intending to take control of that oil actually.

Our legislation that was introduced yesterday will finally hold the energy futures market to the same standards of accountability that other futures market are held. This is a matter of fairness and common sense. We are not saying that all speculation is bad. It can be very healthy in a well functioning market. It can help the market find the most efficient price. But without proper market oversight, speculation has gotten out of hand, and that is one reason for record gas prices.

As I have said, curbing excessive speculation is not the solution to our energy crisis, but it is one step, an important step, that we can take now to lower prices and ease the burden of this crisis for the American people.

So, Mr. Chairman, I hope that our Republican colleagues will support our efforts. Part of the package that they introduced a week or 2 ago to solve the energy problems or to take a bite out of the energy problems of this country was legislation dealing with speculation. If my Republican colleagues do not like our speculation bill, let us hear from them how they want it changed. We will be happy to work with them.

Speculation is, I repeat, a problem. It is a significant problem and we must address this. I would hope that if we can get a handle on this speculation issue by legislating, it will allow us to do other things.

I have spoken to both Senator McConnell and Senator Kyl, saying let us find out what we can do on this. Let us determine what amendments you want to offer and we want to offer and let us see if we can work something out.

But I say to all my friends and anyone within the sound of my voice, speculation is where we should start. There are other places we can go and we are happy to take a look at that perhaps at some time, but let us first look at speculation.

I repeat for the third time here today, speculation is part of the problem that we have got to address. We have to start someplace. There is no one shop that we can go to and solve all the problems. There is no one area of the law that needs to be changed that solves all the problems.

So I think that this workshop is an area where people can bring their ideas. If Republicans have other ideas, if Democrats have other ideas, we are all ears. Let us find out what we can do. So I appreciate very much you and Senator Domenici taking time to listen to all Senators. This is open to everybody, not only members of the committee. So I look forward to a productive workshop and a good bipartisan effort to find solutions for the American people.

If I could be excused, I would appreciate it very much, Mr. Chairman.

The CHAIRMAN. Thank you very much for being here and making a statement. Senator Domenici had one comment, and then we will go to questions.

Senator DOMENICI. Mr. Chairman, before the distinguished Democratic leader leaves—and I understand he must leave—I would like to just comment to him so we do not have to be doing all of this with the media. We can do it between ourselves.

Look, as one Senator who is somewhat in the leadership position on the Republican side, we are willing to look at speculation. We just want to make sure that our leader, you, understand that we think there are production issues involved, that the American people rightfully want us to produce more energy if we can. I just want you to know that we may very well work hard with you on the speculation issue. We may not come to a conclusion, but we are sure going to work at it.

But we expect to bring before the Senate issues that relate to how we are going to use various Alaskan oil that might come on soon if we do things right offshore, which has now taken on a new breath of life which has been in the closet for 27 years. It is rather abundant. It is not a little, tiny piece of property. It is a big oil and gas property, and we would like you to know that we very much want an opportunity to present that. We will work with you in every way so we will have a chance to present that to you and to the American people.

My last comment is—I do not know. I keep saying maybe the Democrats and Republicans can work together on something, and that might be possible. I leave you with that, fully understanding of the way I used to do business was that way. I wish it could come back on energy production, and maybe we could come up with something for our country instead of for our parties or for ourselves.

Thank you very much for the way you are handling things, and just know that there are a lot of Republican Senators who want to get something done and want to work in a positive way to get that done.

Thank you, Mr. Chairman.

Senator REID. Mr. Chairman, if I could just respond to my dear friend, Senator Domenici.

The CHAIRMAN. Yes, go right ahead.

Senator REID. There is no stronger advocate anyplace in the Senate than Senator Bingaman for increasing domestic production. He has given a series of speeches the last couple weeks that have been, I think, really dramatically sound. So we look forward to— you know, it may even be that you have one alternative, to increase domestic production. We have another. But that does not mean that they are mutually exclusive. We can work together.

My only point is that no matter what area we start in regard to doing something about the energy crisis, we have to start someplace. I chose speculation because I think it is a real problem. That does not mean that we cannot, on this piece of legislation, work on other issues. I have given Senator Bingaman the charge to come up with things that he believes, in keeping with what the country needs to increase domestic production and conserve and increase efficiency by maybe spending some money on new battery research. So we are speaking from the same hymnbook, but what we have to do is get on the same page or two so we work together.

I repeat I would hope that we can have this speculation bill as the beginning to do something for the American people to let them know that we are focused on the economy. The economy has had a number of hits, not the least of which is energy, but not the least of which is housing. We have those two issues that we are going to try to make some progress on.

So I appreciate the spirit of Senator Domenici's statement, and I look forward to working with him and all of his 48 colleagues.

The CHAIRMAN. Thank you very much again for being here.

Let me just start with a question. Dr. Yergin, let me ask you. You made a reference that you thought there may be 600,000 or 700,000 barrels of oil that could be saved through increased efficiency, as I understood it. Could you maybe elaborate a little bit as to what you are referring to there? There has been a reduction in usage by Americans faced with high prices. You are saying that there are other things that we could do to encourage even more efficiency without doing any damage to the economy.

Mr. YERGIN. Yes. You know, it is the things that we always hear that are sort of in our left ear as the tips about driving, but if you just look at the research people have done about three things, cold starts, tires, lead foot on driving, and you add up those numbers, you are talking 600,000–700,000 barrels a day. That is not depriving anybody of anything.

But I think there is a woeful lack of knowledge, and in fact, communicating that knowledge is not an expensive or difficult thing to do. It affects everybody's behavior. So we could be talking about 6 or 7 percent of gasoline consumption.

The CHAIRMAN. So you are basically suggesting some kind of just public information campaign to raise people's awareness of the concrete steps they can take. Is that what you are saying?

Mr. YERGIN. Yes. I was struck in your remarks yesterday commenting that given all that is happening with this, how little effort there has actually been in terms of that kind of communication. Yet, of course, what individuals do really adds up because that is what energy consumption is. It is not dramatic. It is not building something. It does not take a long time to happen. But I think you can do that, and those kind of changes do not impose any burden except making sure we all check our tires.

The CHAIRMAN. Senator Domenici, did you have questions of the witnesses?

Senator DOMENICI. Yes, I have one.

First of all, I want to say the idea of promoting conservation with the American people is an excellent one, and I think you have testified—you did, Dr. Yergin—that something is bringing conservation to the mind and hearts of the American people, and we are beginning to use less. I believe that is straight, pure cost. I think cost is having an impact on the American people and they are using less. But we maybe should do more at the executive branch and otherwise.

I think Senator Bingaman has been constantly an advocate of this, and I think it is happening, according to the numbers we are getting.

I would like to ask both of you. I have heard both of you testify that the root cause of high prices is the supply and demand imbalance. I heard Dr. Diwan express it in a very different way based on specifics that changed, and I laud him for that and thank him for helping us in that regard.

But let me just say if that is the problem—the root cause of high prices is supply and demand imbalance—what can we do as policymakers to address this in your judgment. There are lots of things being discussed. Some have value, obviously. Some do not. Could you tell us what we ought to do in your opinion as policymakers now?

Mr. DIWAN. I mean, this is a tight market and it took 20 years to get there. I think it is going to take a long time to unwind it.

I spent most of my career looking at supply and demand numbers, and I have trouble to see the U.S. as an island removed from the world. So for me, globally how do you make sure that supply meets demand and how do you increase supply over a number years and how do you make sure that demand responds to prices? Because in a number of areas, prices are subsidized so that you do not have a response.

It is very difficult for me to say if you move one piece of the puzzle, it is going to change the whole puzzle. How do you provide more access to the most prolific petroleum basin? It is actually probably the biggest thing which will matter in the long term. How do you have access to basically 80 percent of the reserve in the world, which are inaccessible to oil and gas companies, which belongs to national oil companies? The investment profile of these basins depend very much on State budgets. That is probably the bigger problem that you are facing.

The second one is service sector capacity. Even if you open up more land or more water for exploration and production, it is not clear that we have what it takes right now to be able to go drill, explore, produce more. This industry has under-invested for over 20 years. We got lulled by low oil prices. We liked them. They pushed a certain behavior in terms of consumption and supply. Basically we have shrunk this industry quite dramatically in terms of people and capacity and logistics to expand again.

So what we are looking at here is a super cycle for investments, and for that, you really need the signal of the market of high oil prices to bring back petroleum engineers. I mean, we do not train a lot of petroleum engineers anymore.

So it is a very big problem, and I have trouble to believe that you just move one element, it changes completely the puzzle.

Mr. YERGIN. I think there are lots of pieces in this puzzle. I think some of the things are in the realm of our relations with other nations in terms of access, encouraging steady development, encouraging a stable investment environment.

I think clearly in this country, as per this discussion, we are having a debate about what is possible with outer continental shelf. I think we need to look at it, by the way, not only in terms of oil but in terms of natural gas because I suspect this winter you may be as concerned with what has happened with natural gas prices as you are with gasoline right now and with electric prices as a result of that. So our supply position for natural gas really will have to be part of that picture too, and that also fits into the discussion about opening up areas in this country.

But it is a global question about access. I think it is a question about—I think the way Mr. Diwan expressed it that all news is interpreted in a certain way. There needs to be a sense that, yes, there is new supply coming on. For instance, I come back again to Brazil, which could be, some people say as big—5 years ago or 6 years ago, nobody really thought there was this huge supply off of Brazil. Now people at least are saying this could be as big as the North Sea. Cumulative things like that start to change expectations, and if that happens, that would happen before—actually that oil is going to take some years to flow. So it is about what one anticipates for the future, as well as where we are now.

Senator DOMENICI. Thank you.

The CHAIRMAN. Senator Dorgan has to leave to chair another hearing. So let me call on him first. Then we will take the list of folks in the order they came and just see if any others have questions or comments or whatever.

Senator DORGAN. Mr. Chairman, thank you. I have to chair a hearing at 10 o'clock, and I apologize to have to leave.

But I thank both of the folks who have joined us today, obviously experts and people who know a lot about these issues.

I think it is important that we not talk past each other on this committee or in the Congress. There is a danger of doing that. It seems to me that it is a false choice for anyone to suggest that doing one thing necessarily excludes doing another thing. I happen to think we have to everything. I think speculation is a big problem, but I think we have to do production. We have to do conservation. I would probably even measure conservation slightly ahead of production in terms of the cheapest oil that is available through conservation. Conservation, efficiency, production, renewables. We need to do all of that.

But I want to ask about speculation, if I might, for the moment. Mr. Yergin, you indicated that you did a modeling recently, a year and a half—or was it 2 years ago—on $150 a barrel oil. What was the date on that?

Mr. YERGIN. That would have been September 2006.

Senator DORGAN. So slightly less than 2 years ago. I think you said although you modeled $150 a barrel oil, you felt at that point probably almost a zero possibility or a zero probability.

Mr. YERGIN. Yes. It was ironic because in fact when we do these scenarios, we do not put probabilities on it. But I was going to say it was not the thing that people just said, oh, yes, that is exactly what is going to happen.

Senator DORGAN. Right. But I think you said almost a zero probability, and I think most people would have believed that back then.

So then the question is what has happened in the last 18 months that went from a zero probability for an expert to actual $140–some a barrel oil.

Mr. Diwan says that the people in this futures market affecting price, over two-thirds of them—73 percent I think you suggest—are what we call speculators, you said what you call investors. But nonetheless, they are people who are not hedging a physical product between consumers and producers of a physical product hedging risk. They are in this market because they view this as simply a new asset class. They have no interest in owning oil.

So I guess the question I have is this. What has happened in the supply and demand fundamentals or expectations—because Senator Domenici said that both of you said that—I am not sure that you both said this—but the root cause is supply and demand imbalance. If that is the case, then what has happened in supply and demand expectations or changes in the last 18 months that would justify the doubling, more than doubling, of the price of oil in the 18 months if it is not in some significant part attributable to speculation by those in the market that are not engaged in hedging a physical product?

Mr. YERGIN. Recently the Dallas Federal Reserve came out with a study looking at the increase in oil prices between 2003–2007. I think they attribute about a third of the increase in the price of oil to the decline of the dollar.

So one thing that has happened, if you look at when oil prices were bumping along at about $70–$80 a barrel at the time that the credit crisis began exactly a year ago. That is a point when you look at not only oil. Most all commodity prices really took off. So one thing that has happened is the decline in the value of the dollar, the loss of confidence in U.S. financial markets, loss of confidence in debt. So I think that is one big thing that has happened.

A second thing that has happened is that Iran has continued to make progress. Its centrifuges continue to whirl. I think that the fear of something happening involving Iran—and I think Mr. Diwan would agree—over the last 2 years has become a more palpable factor in the market and people looking at those numbers of what passes through the Strait of Hormuz.

I think the whole movement of the much greater interest of the financial markets in oil and other commodities is certainly part of it.

Then the other thing that has happened—and when we did this scenario, it was premised on delays and postponements in supply because of the problems in the supply chain. We have seen no slowing down in the increase of costs in terms of development, and so this expectation of a shortage period in 2012–2013 has become more a part of this sort of shortage psychology that is again, as Mr. Diwan said, part of the market outlook.

So as we are saying, financial markets are part of a feature in which these other things are happening at the same time. We have seen Mexican supply go down. We have seen Venezuelan capacity go down. Iraqi production has not come back significantly.

One other key factor, in the first half of this decade, the growth in Russian output more than outpaced the growth in Chinese demand. Russian production now maybe even is in decline slightly.

Senator DORGAN. You have also seen the largest assessment of recoverable reserves ever measured in the Lower 48 just recently with the Bakken shale in Montana and North Dakota. I think it relates to what Mr. Diwan suggested, that the good news does not register apparently.

But I appreciate your response. I have to go chair the hearing. But I think that speculation probably plays a much larger role, probably speculation around the very things you talked about, than does supply and demand.

The CHAIRMAN. Let me just give a list of the first five folks here in the order they arrived so that they know they are going to be called on if they are still around: Senator Conrad first, then Senator Barrasso, then Senator Alexander, then Senator Craig, then Senator Allard. Why do we not start that way? Senator Conrad, thanks for being here.

Senator CONRAD. Mr. Chairman, thank you very, very much for holding this workshop. Thanks too to the ranking member, Senator Domenici, for doing this. I really think is exactly what we should be doing, putting a focus on this issue in a bipartisan way so that we can try to find a solution or a set of solutions that would make a difference both near-term and longer-term.

I asked my staff yesterday to prepare a list of things that we have done in the Congress since 2004 trying to deal with what we all saw as an energy challenge to the country.

In 2004, we provided $5 billion of energy tax incentives, biodiesel tax credits, ethanol tax credits.

In 2005, we passed the Energy Policy Act of 2005, $14 billion of tax incentives for energy efficiency and conservation, renewable energy, oil and gas incentives, clean coal projects. We had energy efficiency provisions to provide higher efficiency standards for appliances and commercial equipment.

In 2006, we had the Tax Relief and Health Care Act of 2006, in which we also opened up part of the Gulf of Mexico, 8 million acres there, for leasing for oil and gas.

Then in 2007, we had the Energy Independence and Security Act providing, for the first time in over 20 years, an increase in fuel efficiency standards for the automobile and truck fleet, a dramatic expansion of the renewable fuel standard from 9 billion gallons to 36 billion, with 21 billion to come from cellulosic. Again, we went back to energy efficiency, new energy efficiency standards for appliances and lighting, greater energy efficiency requirements on Federal and commercial buildings, carbon capture incentives.

Then this year, the farm bill with over $1 billion dedicated to energy, trying to reduce our dependence on foreign oil, including a dramatic increase in research on cellulosic, which I think most of us understand is going to be critically important because corn-based ethanol has its limits.

I say this by way of a preface that there have been a whole series of actions, many of them that do not take effect immediately. Perhaps the only thing that takes effect immediately is, to the extent speculation is involved here, steps to address that. But clearly, we do not have just a short-term problem, and speculation alone will not solve this matter. There is the issue of supply and demand and the long-term perceptions, as the two of you have described.

My question to you would be this. If you had it in your power to design a plan to get results to reduce our dependence on foreign oil, to reduce this dramatic run-up in prices which threatens the economy, what would you do?

Dr. Yergin.

Mr. YERGIN. You have quite a list there that you have already established.

I think I would want to look more on the demand side in terms of efficiency beyond what you have had. I think on the list, you had clearly one of the most important things was the fuel efficiency standards and the impact that they can have.

About 10 years ago, I headed a task force at the Department of Energy on energy research and development, and at that point, there was not much interest in the subject. I have often thought if the kind of effort had been started then, we would not be in the kind of situation we are now.

So without going into the specifics, the other thing is a long-term, consistent program of research and development across the energy spectrum. It does not bring results tomorrow, but that is what we need to diversify our energy mix and to build much more resilience into the system than we have today.

Senator CONRAD. On the production side?

Mr. YERGIN. I think that the issue you all are debating about what do you do about the outer continental shelf, that other 85 percent, and in an environmentally sound way opening up—I guess the starting point there is—as I understand, the money was appropriated to do a seismic survey but not conducted? I mean, the first thing would be to understand what kind of resource base we have.

The CHAIRMAN. In fairness, I do not think money was appropriated. I do not think it was requested. So it was authorized and we directed in the 2005 bill that the 3–D seismic survey be done, but there was never any follow-up by the Administration or the Congress to get that done.

Mr. YERGIN. So the knowledge base in a sense is the starting point to know where the real leverage points are in terms of impact.

Senator CONRAD. As I hear you say it, you would be working all sides of this equation. You would be working on speculation. You would be working on production. You would be working on conservation. You would do something in all of those areas.

Mr. YERGIN. Yes, exactly. I go back to the fact that we have a $14 trillion economy, and it does not just rest on one leg to do it.

I think we need further clarification. As I said in my remarks, we use the word "speculation," and it is not clear often what that means. Clearly, the financial markets have a much bigger role than they did 3 or 4 years ago in this, as in other commodity markets. Will it turn out to be a bubble, as we have seen in other markets, or not?

I think that the problem with the energy market, unlike, let us say, even housing or the Internet—those are not affected by geopolitical forces. You have this whole geopolitical uncertainty that hangs over the energy market specifically.

Senator CONRAD. Would you do something about the value of the dollar as well since both of you have identified the weak dollar as a key reason for the run-up in prices?

Mr. YERGIN. That is outside. I think that is outside the realm of energy policy, and I think you have the chairman of the——

Senator CONRAD. Yes. We have got to connect the dots.

Mr. YERGIN. Yes. But I think that we should recognize, if you look at all the commodities, the weakness of the dollar. If you go outside the United States, the significance of the weakness of the dollar and the flight—normally during times of instability, you have a flight dollar. In terms of currency instability, we have this flight commodity going on right now. So in principle, we have other problems in the country, but a stronger dollar I think would actually be a factor that would help ameliorate——

Senator CONRAD. Mr. Diwan, what would you do?

Mr. DIWAN. When I look at the energy policy of the United States—I am a European. So I am taking a slightly different perspective. In a way what we have done here in the last 25 years, we encouraged consumption and we discouraged production. We need to fix both things in a way.

We have allowed cars to become very large and very inefficient. We have not done much about it. I agree with Dr. Yergin that probably the most important element of legislation over the past few years was the CAFE standards. But think about it. We talk a lot about new technology and R&D, et cetera. But the average car efficiency in the United States right now is half of what it is in Europe. So we can talk about new technologies, but there is plenty of available technologies to get more efficient. So that is the largest problem.

I mean, the United States consumes close to 50 percent of world gasoline. Those are a little bit scary numbers here.

So we have allowed people to drive bigger cars further out in the suburbs, and we are paying the price. So we can say it is speculators, it is oil companies, it is this and that. At the end of the day, it is us. We need to be honest about it. I know it is difficult to say it is us. It is easier to say it is them, whoever they are, speculators, OPEC, et cetera. But we have done that to ourselves. So we need to look there. So I think it is both consumption and production in that sense.

But that will take a long time. I mean, you have incredible infrastructure in this country. You have enormous installed capital, and to churn that capital to more efficient capital will take 10, 15, 20 years.

So the question is what can we do in the short term, and the only thing we can do in the short term is try to do little things. I mean, look at the commodity laws and see how we got where we are and look at what I would call the investors, not the speculators, look at the little things we can do to improve the efficiency of the cars in the short term. Dr. Yergin talked about inflating tires. I think it is difficult to ask 300 million people to do it, but we need to encourage those kind of things.

So there is a lot to be done, but at the end of the day, we got our priority wrong in the last 25 years and we need to fix that.

The CHAIRMAN. On our list here, I think several of the folks who I read off before are no longer here. Senator Barrasso is not here. Senator Alexander is not here. Oh, Senator Alexander is here.

Senator ALEXANDER. You can let someone else go ahead.

The CHAIRMAN. I think the next one here would be Senator Allard since Senator Craig left. So Senator Allard, go ahead.

Senator ALLARD. Thank you, Mr. Chairman and thank you for holding this—I guess you are not calling it a hearing, but discussion of what has actually been happening as far as the energy markets. I think you do bring in some interesting perspectives and whatnot.

I would follow up with what Senator Conrad was approaching. Many times we are faced with an argument of more independence as far as the United States is concerned, less dependence on foreign sources of energy. If we are trying to become more dependent on just our own sources of energy and whatnot, you talked about conservation, but on the supply side, what can we do?

One of the arguments that struck me is that we are the only country, for example, that limits offshore drilling. I do not know whether that is correct or not or whether you agree with that statement. But do we do that as compared to other countries? How does our controlling supply maybe differ from what other countries are doing?

Mr. YERGIN. Let me say, first of all, I think we import on a net basis about 58 percent of our oil and about 25 percent of our total energy. Of course, our two major sources of oil—two out of three—are our neighbors, Canada and Mexico. So it is kind of keeping that framework.

So are we going to become energy independent or are we really going to focus on our energy security and resilience of our system? I think that is really where we ought to be.

I think on the offshore, I was looking last week at a survey that said that Norway is the second greenest country in the world in terms of environmental policies. They produce about 3 million barrels a day entirely offshore in the North Sea in a pretty harsh environment. I think one question might be, how do the Norwegians manage this? I mean, if we want to see how other people are doing it. I think in this survey, the U.S. was ranked number 31 in terms of environmental countries. So I think there are messages there in terms of how other countries handle it.

Of course, we have that very large energy complex in the Gulf of Mexico and then off Alaska. I mean, 27 percent of our oil now comes from the offshore. So it is not like we have not done it before.

Mr. DIWAN. I have a problem with the concept of being energy independent. After all, we are dependent for everything else. This is an open world. Even if the United States produced 95 percent of its oil, if something happened in Venezuela or Nigeria or Iran, oil prices will increase here. Really it is a price impact. So no matter what happens anywhere else in the world, it is the butterfly effect. It will have a price impact in the United States. So at the end of the day, we are linked globally to everybody else who consumes and produces oil, and that is what is important.

On the issue of producing more and in the offshore—and I agree with Dr. Yergin here—we can impose very tough environmental standards and look at what the industry can do. I agree that some countries have much tougher standards and have been able to produce with very little spill or risk of spill over time. So we can do things.

A broader question here is, how do you fix a policy to both encourage production and consumption at the same time?

Senator ALLARD. Many States in the West have a lot of public lands. Do you have any figures on the amount of known reserves that we have in public lands and any idea of what perhaps projected possible reserves might be on public lands?

Mr. YERGIN. I do not. The only thing I would say is that reserves is not a static concept. We have seen that technology changes and areas that were thought to be in decline or finished, in the Rockies, for instance, turn out to be significant producers, or we see unconventional natural gas. So technology itself expands the resource base. But I do not know what the current estimates are for the West.

Mr. DIWAN. Nor myself. I do not have a number.

The CHAIRMAN. Yes, we can sure get all that information for you.

Senator ALLARD. I appreciate that very much, Mr. Chairman. That concludes my questions.

The CHAIRMAN. Senator Salazar.

Senator SALAZAR. Thank you very much, Chairman Bingaman.

I think over the last 3 and a half years on this committee, we have done some good things around energy. I think the three pieces of legislation we passed in 2005, 2006, and 2007 were good. The question now is what more we ought to do, especially given the pain that the people of America are feeling with high gas prices.

I think there is broad agreement on conservation, I think on alternative fuels, alternative energy, I think broad agreement on new technologies, hybrid plug-ins, battery technologies, et cetera. But the big debate I think that will take shape here in the next week or 2 will be about additional supplies, putting more oil into the pipelines.

My question to you, Dr. Yergin and Mr. Diwan, has to do with what those additional supply sources might do with respect to the high gas and diesel and jet fuel prices that we are paying in America today. I want to be specific.

First of all, with respect to existing leases, there is a number out there that there is some 68 million acres of public lands that have already been leased, much of which is not in production. Is there anything that can be done to put those into production? What would be the impact in terms of energy prices?

Second of all, the Alaska petroleum reserve. The Alaska petroleum reserve is there, proven reserves. Why can that not be put onto the market, and what would happen if the Alaska petroleum reserve did come on?

Third of all, offshore. If we looked at the areas that do not have a moratorium in places off Alaska, if we were to push for those areas to be opened up, what impact would that have in terms of our energy prices?

So maybe if you can just answer that last question, in terms of additional supplies where I think there might be agreement in terms of us moving forward and trying to push our production from those areas.

Mr. YERGIN. Of course, the offshore areas are the ones with the longest lead time. So in terms of physical oil coming on, if you start it today, there are several years. There is the question of the sense of expectations of new supplies coming on, and I think ultimately—we have seen it in the last 2 days I think. We have seen the price drop rather substantially. Who knows what will happen today?

But it goes back to what Mr. Diwan is saying. When there is a kind of cumulative shift in the emphasis that from there is going to be a shortage to, in fact, that new supplies, new areas are going to open up—and, by the way, the expectations that people have, the pictures of demand from 2 years ago is no longer appropriate after these type of prices. Oil is not going to retain its monopoly position in transportation. You mentioned hybrids and so forth. We have mentioned biofuels. Oil will probably have the predominant role. That kind of shift, at some point, is what starts to bring the prices down. Maybe we are starting to see the demand responses specifically that will also reinforce that.

Senator SALAZAR. Let me push you just a little bit on that question. When I look at information that we have on the Alaskan OCS that is not covered by the moratoria, the number that I have is that there are 918 million acres that are available out there. I think the numbers from the Minerals Management Service indicate 1.2 billion barrels of oil in that area, 17.8 trillion cubic feet of natural gas.

If there was a major push to go into an area of that size, what impact would it ultimately have on energy prices here in the U.S.? Would there be an immediate impact? Would it be a lag impact? What kind of impact would it have?

Mr. YERGIN. I mean, it certainly would not have immediate impact in terms of supply because it would be a 5-, 6-, 7-year development program. I think if the sense that—and in other areas—you start to have a sense that new supply is coming on, that then changes the kind of expectations that are driving the market.

I think that each of the companies—the reason they bid—sometimes several companies will bid for a lease and sometimes no one will bid for it, and sometimes one person will bid—is because different companies will look at the geological potential. It is fairly—you know, we use the word "speculative," but speculative in a different way because you really do not know until you actually start serious exploration. So there is a lead time.

Senator SALAZAR. I recognize the lead time because you make these lands available and it takes time to do the exploration and to do the quantification and do the development that it is going to take. But just making them available and getting on a program to actually get those leased, would that have an impact on price?

Mr. YERGIN. Yes. I think, if I understand your question, that the sense of new prospective territories being available and moving toward serious exploration I think would be one contribution to the mosaic of expectations.

Senator SALAZAR. Thank you.

I know my time is up. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Alexander.

Senator ALEXANDER. Thank you very much for really helpful testimony. I am sorry I missed the last 30 minutes.

But I would like to go back to an understanding of this. Do I understand each of you to say that today's price for oil depends to a large extent upon the expected future supply and future demand of oil? Is that correct? How can I say that more accurately?

Mr. YERGIN. Yes.

Senator ALEXANDER. Because a lot of people say that this might take 5 years, and I think what I hear you saying is if we see a shift in demand, such as with plug-in hybrid electric cars, if this country, using 25 percent of all the oil in the world, suddenly got on a clear track toward electrifying a large portion of the cars and trucks, that that expectation from the future would affect today's oil price. Is that correct or wrong?

Mr. YERGIN. Yes. I want to make clear—and I think both of us agree with this—you have to start from where we are today. We have a tight supply/demand balance. We only have about 2 million barrels a day. If something bad happens somewhere in the world and we lost a million barrels a day, that would have an immediate negative impact on the market. Part of what is in the market is the recognition that there is not much margin for error.

On top of that, however, expectations today—I think we are both saying—have a larger impact on price than it might have at other periods because there is this sort of drum beat that in 2012, 2013, there is going to be a physical shortage of oil in the world. I find that widely believed when you talk to kind of a cross section of people who follow these things.

Mr. DIWAN. I will add one thing which is important in the psychology of if you provide more land, they might believe that the supply is going to increase and they stop putting in the expectation. You are going to have to do a lot to change the expectations because the problem is not only the access, but it is really the ability to go explore, build the facilities, and produce. The bottleneck in the service sector is such that even if you are putting more land

and good land, which might have potential reserves, the skepticism vis-a-vis the ability to produce that in the next 5 to 7 years is very big.

I mean, think about the large fields which are coming on line right now in the world in Angola and Nigeria and the Gulf of Mexico and Brazil, et cetera. All of these fields are 4 to 5 years late, behind schedule. On average, they are 4 years behind schedule. All these fields were—basically we stopped working on them in the mid-1990s. So we have been waiting for a long time for that oil to come. That has really permeated the market. If an oil company tells you it is coming in 6 years, it is really coming in 10 years, maybe. The fact that often these fields coming on line are smaller than what they thought they would be.

So the psychology has been really impacted by what happened over the last 5 years, all those delays and the incredible length of time it took to develop these deep offshore fields.

Senator ALEXANDER. But you are still saying that today's price depends upon the expected future supply and demand. Is that right? In part. A big part, small part?

Mr. YERGIN. I think that in this very tight market, these expectations loom larger than they would have maybe a few years ago. There is much more focus on this mid-term notion. You know, I would say there are four things. There is a tight supply and demand. There is Iran and these mid-term expectations about supply and China and demand growth. I think those are the kind of starting points that are shaping the psychology of price today.

Mr. DIWAN. One thing which is remarkable, if you look at the price growth, so if you look at oil prices 2, 3, 5, 10, 12 years away, they are very close to today's price. So the market is having difficulties to understand all of that. We have a very flat curve in terms of oil prices. We do not have a very big shift in expectations which are reflected in the price curve. So the market is basically taking today's balance and the expectation in the future that not much is happening and pricing oil in the very long term.

Senator ALEXANDER. You mean locking in today's price at a future time.

Mr. DIWAN. Correct. I mean, if today's price is $135, prices 10 years from now on the futures exchanges are probably $137, which does not make a lot of sense in many ways because you would have very different expectation of——

Senator ALEXANDER. May I ask one other question? Have either of you made projections? I mean, there is talk about oil as a bridge to a future when we have a different kind of energy. As policymakers, how should we think about—how much oil is the United States going to need 10 years from now, 20 years from now, 30 years from now or as we move to a different kind of energy future? Have you done projections of that kind?

Mr. YERGIN. I do not think so.

Senator ALEXANDER. Did you, sir?

Mr. DIWAN. I mean, the difficulty here is price is the most important function. Depending on prices, your projection will be very different. So if you believe it is going to be $140 oil going forward, I think you will see a big destruction of demand and a faster shift to other energies. If you had $20 oil, you can be sure that we would have a very steep forecast and demand increase. So price is what killed the price at the end of the day.

Senator ALEXANDER. Did you say while I was out of the room—you said that 27 percent of the activity of the buyers and sellers of oil today are financial people—or 27 percent are the people who actually take physical possession of the oil. Is that what you said?

Mr. DIWAN. Yes. The latest CFTC data, which really break it down, which is April I think, shows that between 27 and 29 percent of the market is commercial.

Senator ALEXANDER. The rest are financial people.

Mr. DIWAN. Yes, different type of commercial——

Senator ALEXANDER. Did you say what you thought we should do about that, if anything?

Mr. DIWAN. What I said is what we have done is we have closed the door and at one point we opened the window. Perhaps it is time to close the window and make sure that all the players in the commodity market abide by the same rule of position limits.

The CHAIRMAN. All right. Let me just go through the list so everyone knows. Some of the folks who were here earlier who I do not think are here now, Senator Barrasso, Senator Craig, Senator Voinovich, Senator Cantwell, Senator Chambliss, Senator Bennett. So the next who is here is Senator Corker.

Senator CORKER. Thank you, Mr. Chairman. As others have said, I think this has been most enlightening and I certainly appreciate the efforts of you and Senator Conrad and Chambliss and others to try to solve this problem.

I have only been in this body for about 19 months and continue to be amazed at the way that we look at things here. I mean, we have had two experts and many others ad nauseam who tell us that the law of supply and demand continues to work in the year 2008, which is an amazing thing. It has worked for so long before.

Yet, we began to talk about energy legislation instead of focusing on supply and demand issues. I appreciate so much your focus on conservation and lessening of demand. Where do we begin that discussion but with speculation, which is a symptom of the fact that we do not have the courage or ability in this country to do the tough lifting of supply and demand? So we want to do the easy things first, probably the wrong things first.

I just find it amazing that the majority leader of the Senate was in here in this body earlier and was talking about what a great thing this was to have this summit but did not hear a single thing that was being said, and that is it is supply and demand. So we start way off here in another place. I can understand why this body has a 9 percent approval rating because we do not address the issues as they really are.

Now, I will say this. Since it looks like we are going to talk about speculation—I do not have control of the agenda. Nobody here does other than the person who just left.

I would like to understand what we mean about closing the window. It seems to me that what we ought to be concerned about in this country is if somebody is manipulating the market. I mean, at the end of the day, if there is ocean-front property and there is only so much of it, then it seems like the price is going to go up, and it seems like that we understand that. If there is not going to be additional supply and it is going to be bullish and we are not going to have hurricanes and things, that that is going to continue to go.

So I guess I have a hard time understanding why we would be concerned about investors in the market. It seems like what we would be concerned about is manipulators in the market, and it seems like to manipulate, you would have to hoard supply somehow, hoard the product. But I would love for you, if you would, to expand just a little bit because I think we ought to try to do the right things and not try to find a bogeyman, if you will, to sort of pen off politically and make the American people think we are actually doing something when we are not. So if you could expand on that and help us, that would be great.

Mr. DIWAN. Yes. I do not think there is a bogeyman here.

What I am trying to say is basically all the commodity exchanges in general had allowed two types of players on them: what we call the commercials, people who buy and physically need oil, sell it or buy it; and the non-commercial, which are the speculators, if you want. The idea is we need the speculators to provide liquidity to the market.

In this market, we have traditionally set the position limit, how much each speculator by himself can hold—you know, what number of contracts they can hold. In oil it is 3 million barrels. So we had that legislation for very long.

But we have allowed at one point in 1999 that index funds do not abide by that position limit. This is what I have called the window, if you want. So suddenly you have a new type of players which never bought and sold oil like university endowments and pension funds globally, not only in the U.S., to basically use oil as a financial asset, not as a physical commodity.

We can reimpose that position limit so they would have to abide like the other speculators. I mean, hedge funds, for example, have to abide by that limit, but if you are buying through the index fund, you can basically go beyond your limit. So that is the one problem.

Senator CORKER. So that is a problem. So tell us specifically because we do really bad things here. Tell us how we solve that problem.

Mr. DIWAN. We do not know how big of a problem it is because we do not know if we have 500 pension funds which each of them actually is below the position limit or we have 20 of them which have massive positions. We do not know that.

Senator CORKER. OK. Let me ask you this. In solving a problem, it seems the first thing we would want to do is to know the answer to the question or we would want to know how many people are doing it. Is that correct?

So let me just ask, would it not be wise for us to invest in staffing and ensuring that we have transparency and understanding the dynamics of the issue before we try to solve it? I would just ask you that question.

Mr. DIWAN. Sure. I think we need a lot more transparency and the data has been poor to dismal. This is right now probably one of the most important parts of the oil price formation, and we have very little ability to understand because the data provided by the regulator, CFTC, is inadequate. If you had a lot more data and transparency, we would be able to do a lot more analysis.

But there is also an issue of do we need every single player to disclose publicly the data or the regulator by itself will have to look at these positions. What we know is basically that position limits do not apply if you come through one side of the market. That is what we know. We know that that section of the market right now, these swap dealers, if you want, represent the largest section of the market and they have grown very, very fast. Actually it is the only real increase in the open interest. It is coming from these players. So the money is coming in quite fast through that instrument, the index funds.

Traditionally what speculators are bringing to the market is liquidity. They are buying and selling. The problem with the index fund, they only come on one side. They only buy long. They never are short. They are not allowed to. Quite often it is like a parking lot. They are here to park money. So in a way they are drawing liquidity away from the market.

Senator CORKER. Since we typically do not address the issues head on, if we were going to try to address this specific issue that you know more about than anybody on this panel, how would we do that?

Mr. DIWAN. You reimpose position limits for all players. So if you are coming through an index fund or you are coming directly to the market, the amount of oil that you can hold is the same as any other players.

Senator CORKER. Now, how do you impose position limits when this is done over the counter and there are not mechanisms in place to know what those limits are?

Mr. DIWAN. Those are in the future markets. The brokers, if you want, hedge these positions on the market. The exchanges regulate already the position limits of all the other actors. So they need the brokers to disclose data so they can regulate that.

Senator CORKER. So does something have to happen first for us to be able to do what it is you are suggesting?

Mr. DIWAN. We need to ask the regulator to regulate that aspect and to impose a position limit.

Senator CORKER. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Gentlemen, thank you for your comments this morning. I think we have heard some—I do not know—I would call them the hard truths when you remind us that our policy in this Nation has really been to encourage consumption and to discourage investment. That is really a very big contributor to where we are today and why we are facing the prices that we are facing. Sometimes I think we hate to admit that it is us. We are looking for somebody to point the finger at when, in fact, we are part of the problem. I think that is sometimes a difficult reality. So I appreciate your reminding us of it.

I also appreciate the comments about recognizing that it is not just about providing the access. When it comes to the supply side, we can go ahead and we can make more acreage available for leasing, but as we know full well up in Alaska, you can make that available but you might not see a return on that ever or it may be 10, 15, 20 years down the road.

Shell put up over $2 billion in leasing. They have been held up because of litigation for two seasons now, and they are going to come back and try again next year. But our reality is that there are other impediments out there, and just suggesting that we can make more available—yesterday's news back home was that Interior has put up millions of additional acreage in the NPRA, and that is good. But that is not new news. That plan was released in May, but it was not as exciting an issue back in May because we were not looking at the prices in May that we are today. So I appreciate the perspective on that.

What I wanted to ask about—and, Mr. Diwan, you mentioned it, I think, in talking about the supply/demand imbalance and the access to some 80 percent of the world supply. We know that right now what we are seeing is the direction that so many nations are taking in terms of nationalizing their oil assets and acting in their national interest as opposed to a global interest. We are talking about how much does market speculation increase the price. Do we have any idea how much this nationalization trend is influencing our prices?

Mr. DIWAN. I have been looking at prices for most of my professional life. I have never been able to break it down into this event has that type of impact and this event has that type of impact. I do not think I can. I do not know if you have looked at it differently.

Mr. YERGIN. As Mr. Diwan says, I do not know how to parse it specifically, but I can say that one feature of the current period is that so much money is flowing into the countries that control these resources. This year we estimated it might be a $2.3 trillion income transfer from consumers to producers. Those countries do not have a great sense of urgency about developing resources. They are making more money than they thought they would make. They have to decide where to put that money. There are lots of claimants domestically for that money. So they say, what is the rush? So it just takes longer. Decision-making is slower. Things do not get done. So I think that is one way that kind of nationalism, if you are saying it, or national control manifests itself. They just do not feel the urgency.

Senator MURKOWSKI. You see the front page of the Washington Post this morning about what Saudi Arabia is doing with their just incredible resource wealth in terms of creating a new economic—I do not remember exactly the specifics of it.

But recognizing that trend, I think the comment was made that one-third of the price increase that we have seen between 2003 and 2007 was attributable to what was going on with the dollar. In the past decade, we are seeing again this greater trend toward nationalism. I am assuming that it is your opinion that this will continue as opposed to shifting any other direction, that it is going to continue——

Mr. YERGIN. Until the price comes down. Prices at this level—again, it just takes that urgency. So this could be a while before that trend—I am sorry to interrupt.

Senator MURKOWSKI. No. Go ahead.

Mr. YERGIN. I was going to say that one area—and this gets into the area of diplomacy—is that the U.S., where it can, ought to be encouraging countries to be timely and expeditious in their decisionmaking.

Senator MURKOWSKI. When it is in their best interests.

Mr. YERGIN. When it is in their best interests.

Senator MURKOWSKI. Very quickly then and I will turn it over to my colleagues.

In the short term, is it fair to say that the most immediate thing we could do to help reduce the prices that people are paying across the country is on the demand side from a conservation and an efficiency perspective?

Mr. YERGIN. Yes. I think that is because you are talking about physical barrels being consumed in the world and affecting that tight margin of supply and demand. Our gasoline market is bigger than the entire oil market of any other country.

Senator MURKOWSKI. Thank you.

Mr. DIWAN. We are already starting to see that. Gasoline prices are high because crude oil prices are high, but gasoline per se right now is not very expensive, I mean, the difference between gasoline and crude, if you want, the margin. One of the reasons is very simple. Supply has been growing. We are adding gasoline supply into the market because we have a growth in refining capacity. We have ethanol, and at the same time, demand is declining. So the gasoline portion of the price, if you want, is shrinking, but the crude oil price, which is really the base of the price, has risen dramatically.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Mr. YERGIN. Senator Murkowski, could I just add? Just to reiterate, the reason we are all here today is the urgency of this because it goes back to the basic fact we are in an oil shock and this is a tremendous burden on our economy and the global economy. At prices at this level, we are running on a global basis very substantial risks.

The CHAIRMAN. Let me just give the listing of folks that I have here that are here at the current time: Senator Sessions, Senator Lincoln, Senator Ben Nelson, Senator Menendez, Senator Isakson, Senator Whitehouse, Senator Tester.

Jeff, why don't you go ahead?

Senator SESSIONS. Was Senator Nelson ahead of me?

The CHAIRMAN. Were you ahead? I was given a list here that said that Senator Sessions was here and then Senator Lincoln and then Senator Nelson.

Senator SESSIONS. I would certainly be pleased to yield my time to Senator Nelson. I think he was here when I came.

The CHAIRMAN. Why don't we go ahead with you then?

Senator SESSIONS. I think that would be fair and just.

The CHAIRMAN. We will do you. What about Blanche? Was she here ahead of you too?

Senator SESSIONS. I do not know. I saw her in the hall. She left. She came back.

The CHAIRMAN. We will go to Senator Nelson. Then we will go to you.

Senator SESSIONS. Whether she keeps her place or not I do not know.

The CHAIRMAN. Senator Cantwell was here ahead of all of you, but she stepped out and now she is back. But go ahead, Senator Nelson.

Senator BEN NELSON. Thank you, Mr. Chairman. I have to say to my friend from Alabama that he is characteristically gracious and I appreciate that.

As we think about drilling and the question to drill or not to drill or where to drill, you mentioned prolific basins or prolific areas. Do we have currently, with the appraisal that we have which is outdated, enough knowledge to know where the prolific areas are, No. 1?

No. 2, would it even be better, though, to have a new appraisal, an assessment, a seismic assessment, to be helpful? How long would that take if we decided to wait or to go forth with a new assessment? Either one of you.

Mr. DIWAN. Globally we know that basically most of the world reserve goes from northern Iraq to the southern tip of Saudi Arabia on the east side. I mean, basically probably 70 percent of world reserves are concentrated there.

Senator BEN NELSON. Based on what we know right now.

Mr. DIWAN. Based on what we know right now and on the size of fields that we discover in the region and what we know of the previous surveys, for example, in Iraq where you have probably—of the eight largest fields which are not producing in the world, I think seven of them are in Iraq right now.

So we know, with the existing technology we had over the last 20 years, where these prolific basins are. The United States is fairly well explored, if you want, because we have been allowing the oil companies to do a lot more work here, and in this country, we are willing to go get much smaller pockets of reserve than anywhere else in the world because the economics are profitable.

But also we have new technology and sometimes new technology allows you to discover new reserves. Dr. Yergin was talking about in Brazil we just discovered the two largest fields of the last 10 years over the last 18 months.

Senator BEN NELSON. We did not know that because we had not had the experience with that area in terms of seismic appraisal?

Mr. DIWAN. Correct. Yes.

Mr. YERGIN. The technology.

Mr. DIWAN. We did not have the technology. These reserves are below a layer of salt, and traditionally we have not been able to do good seismic through salt. So we might have the same in other places in the world.

Senator BEN NELSON. So it would be good to have another assessment, and would that be true, let us say, of the outer shelf or the Gulf of Mexico if we are talking about offshore locations?

Mr. DIWAN. Sure. We have exploration in the Gulf of Mexico and we are discovering a big, new place. We had discovered one 3 years ago which we have not really yet determined. It takes a long time to determine. You need to drill into depths that you have never done before. So you are always on the edge of the technology available at the time.

The same in Brazil. What we discovered—anyway, we do not have yet the technology to produce. It is really at the edge of what we know.

Senator BEN NELSON. In terms of the leases that the oil companies have today—let us say in the outer shelf, the Gulf, and on the continental United States—are those leases in areas that you would consider prolific enough for drilling to occur, for production to occur?

Mr. DIWAN. If you discover oil in the United States in these areas in any significant quantity——

Senator BEN NELSON. What we have today.

Mr. DIWAN. Yes. If you have the option of spending money, you will spend it first in the United States because you will make more money on any barrel produced here than anywhere else in the world. So you have incentives to produce as much as you can in the United States.

Senator BEN NELSON. Then if that is the case, why is there such an interest in more leases? Is it that the lease is always greener on the other side of the fence?

Mr. DIWAN. You want to have as much oil as possible to produce. The portfolio of the oil companies is fairly thin in reserves, if you think about it. They have 10 or 15 years only for future production in their portfolio. It is fairly thin.

Senator BEN NELSON. Even with 68 million—I am not trying to be argumentative, but even with 68 million acres under lease, that is not much more than 15 years at best?

Mr. DIWAN. I am pretty sure that a lot of these acres have—we looked if they are prolific or not, and they are not. I mean, oil companies are going to drill what they know, and if there is oil, they will drill it. If there is no oil and gas under these leases, there is nothing to do about it. A lot of it is that. I mean, they are going to prioritize every year. They have a budget and they are going to spend as much as possible on these leases when they know there is oil and gas.

Mr. YERGIN. I think that is the key thing is they prioritize it. If they spend money to win it, they bid a lease, they are bidding against other people. They are doing it because they think there are resources there and then begins a couple of year or several year process to determine it. Then at the end of the day, they have a dry hole or they find resources, but it is not economic to develop or they find productive resources. I think in other parts of the outer continental shelf, our knowledge is maybe 30 years out of date because they were last looked at with technology of 30 years ago.

Senator BEN NELSON. So would that be helpful to have a current assessment of the outer shelf?

Mr. YERGIN. I think so not only from an oil point of view but also looking at the degree to which this country has made a bet on natural gas for electric power generation——

Senator BEN NELSON. Both oil and gas.

Dr. YERGIN [continuing]. That it is important from a gas point of view too because either we import the gas and LNG or we produce it in North America.

Senator BEN NELSON. My final question goes to speculation. I think I heard you say 73 percent or near that number would be speculators. Everybody is a speculator, but it is speculators that have no interest in taking delivery. Is that fair?

Mr. DIWAN. Yes.

Senator BEN NELSON. Five years ago, do we know what that percentage was?

Mr. DIWAN. Probably close to 50 percent.

Senator BEN NELSON. Ten years ago, do we know what that percentage might have been?

Mr. DIWAN. I do not have it off my head, but the market was much, much smaller. The pie has multiplied by six over the last the last 6 years.

Senator BEN NELSON. How much data do we need to collect to know that there is a problem? More data probably helps us narrow down what to do about the problem, but how much more data would we have to know to—when I say a problem, driving up the price of a barrel.

Mr. DIWAN. The data has to be a little bit more refined. We need smaller categories of players rather than these two big categories of commercial/non-commercial. You want to break these into smaller categories, which the CFTC has started to do.

Senator BEN NELSON. How long will it take us to get that kind of data?

Mr. DIWAN. The data exist. We need to process it.

Senator BEN NELSON. No. I understand that you would like to have refinement. We all would. Purely supply and demand—or ignoring the fact that so much of it is about future supply and future demand, that you cannot just say it is as simple as supply and demand. Oversimplistic responses like that are I think what are offending the public. They are sophisticated. They understand that this is a very complex situation. So those who just say supply and demand, find more, use less, that is clear that we need to do that, but it is a lot more challenging than that. Would you agree?

Mr. DIWAN. Yes. It is a very complex puzzle.

Mr. YERGIN. Maybe Mr. Diwan can elaborate on it. You have such a range of participants in the financial markets. You have people that you look at them and say those guys are speculators and then say that those people are 401(k)s who are trying to asset-allocate to protect the pensions of people down the road. So I hope that out of this process we will have some greater clarity as to this range of people who are the financial market players and some way to break it down more into categories.

Senator BEN NELSON. I think it was Will Rogers who said about commodity speculation, when it is pure speculation, that it is people buying something they are never going to get from people who are never going to have it. But if that is the case and it goes to hedge funds and pension funds, that is the most challenging part that we have to deal with right now rather than those people who are going with forward contracts to lock in prices on something that they are going to take and something they are going to need.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much.

Why don't we go with Senator Sessions, Senator Lincoln, and then Senator Cantwell? We will fit you back in since you were here earlier than the others.

Senator SESSIONS. It is basically supply and demand. Is it not, Dr. Yergin? Is that not what is called the boom and bust in the oil industry for all these years that you so brilliantly wrote about in The Prize?

Mr. YERGIN. Thank you. I do think when I kind of finished The Prize and looked at all those hundreds of characters—and sometimes I think that the two more important characters in the book are—one is named supply and one is named demand.

Senator SESSIONS. Where were the speculators when oil was at $25 a barrel?

Mr. YERGIN. Roger.

Mr. DIWAN. I think think you did want to play too much in that market when oil was $25 because you had 5 million per day of spare capacity in OPEC. If you bought or sold oil, basically you were betting on OPEC, which was a risky bet. When you removed that spare capacity from OPEC, suddenly it is supply and demand. It is not anymore OPEC.

Senator SESSIONS. In other words, when there is a deficiency of supply as opposed to demand, the speculators can profit, and that is when they come out and are more visible and more aggressive. Prices are surging and they attempt to capitalize on that by buying contracts for delivery of oil. Is that not basically what happens?

Mr. DIWAN. If you think about the oil futures 6 or 7 years ago, it was small, fairly liquid and fairly contained with few players on it. You had sometimes—how could I say that—price moving in a bizarre fashion because it was small, fairly liquid. So some of the bigger players could do things.

In the last 6–7 years, that market has really mushroomed. It is a very big, liquid market. So you brought a lot of liquidity from these financial players. So the whole structure of that market has changed.

As you did that, you have brought what I call new fundamentals in it. Supply and demand, you are right. But supply and demand of dollars really matter here. The perception of inflation really matters.

At the end of the day, it is supply and demand of paper barrels, and these paper barrels—what you have right now, you have created a structure where we have a lot of people who want to hold paper demand. You do not have a lot of people who are willing to provide paper supply. If you are an oil company and you believe that oil price is going to increase by $20 or $30 because that money keeps coming in, you have little incentive to go sell forward your production. You would be doing a disfavor to your shareholders.

So what we have seen is the commercial players, the ones who are on the long side who are providing, if you want, the supply on the paper market, have removed themselves from that market because it was too risky for them. So the futures market has become, if you want, the sandbox of mostly financial players.

Senator SESSIONS. We could say that because of the shortage and increasing world demand, unusual forces have come into play. I would just say I do not have a religious objection to controlling future speculation. If somebody can come up with a decent idea, I am willing to consider it. Some have worked on that, but I do not think that is the fundamental problem.

Mr. Yergin, your book—you talk about boom and bust. Some say that the world has changed. We are beyond peak oil and you can affect the stock market right now today. I will give you that opportunity.

With the price surging to these record highs, consumption has dropped 3 or so percent already in the United States. Drilling and rigs are out at record levels today. Historically that has led, after a period of years, to a collapse in the price. What do you think?

Mr. YERGIN. I do not think today is the day to predict a collapse in the price of oil.

I do think that—and is it at this level? Is it higher? What I said before, I mean, I think the question of the Middle East and particularly Iran looms quite large and the uncertainty about that.

But I think in a sense if we, to some degree, put aside the geopolitical, I think the reaction to high prices has already begun, and we will see it in terms of demand and supply. So will prices spike higher? It depends upon events. It depends upon economic growth. It depends a lot upon the dollar. But I think we are in this break point world, as I said, when oil's position in transportation 5 years from now is not going to have the absolute dominance that it does today. Our automobile fleet is going to look different from 5 or 6 years ago than people would have thought 3 years ago.

Senator SESSIONS. Nobody can predict the future, but I think there are some forces at work that could moderate the surge we have been seeing. Would you agree with that?

Mr. YERGIN. Yes, absolutely, and I think those forces are already at work.

Senator SESSIONS. Now, I believe that the average family from my calculations is paying $100 a month more for gasoline this year than they were 1 year ago. This is after taxes, after house payment, after basic expenses. The little after-tax money they have is being depleted dramatically. I think the wealth transfer that is occurring out of the United States is unhealthy for our economy. That is a factor too. Is it not? For policymakers like us, Dr. Yergin, this wealth transfer to other countries?

Mr. YERGIN. I think so. We are seeing the kind of balance of the world economy being reshaped in front of our eyes.

Senator SESSIONS. If there is a choice economically for the health of the United States economy, it is better produce our oil here, therefore, churning that money within our economy, than sending it to Venezuela or some Gulf kingdom.

Mr. YERGIN. Certainly what is it? It is going to be $600 billion. Would that be the number you would use too? About $600 billion a year flowing out this year, and if that number was $400 billion, it would be better for our economy.

Senator SESSIONS. I thank both of you for being here. I think Chairman Bingaman is not afraid of the truth. He has had a lot of good panels and a lot of good hearings on these complex issues. We might as well get serious about it.

As to speculation, I see it as a guy on a desert island. He is dying of thirst and bugs are biting him and flies are biting him. Somebody wants to shoo away the flies. What they really need to do is get him some water. I think this economy needs some more oil and continued reduction in utilization.

I will confess that I think Republicans and a number of Democrats should have moved more quickly on CAFE standards but prices of oil were not very high. We were not worried about it.

I think Democrats and some Republicans should have allowed more opening for drilling long ago. The pressure was not so high then. The prices were not so high.

So I think we both made mistakes. But I do truly believe, Mr. Chairman, if we use less and produce more, we can beat the speculators and bring some semblance of reality back to this market that is hurting this country.

The CHAIRMAN. Thank you very much.

Senator Lincoln.

Senator LINCOLN. Thank you, Mr. Chairman. I would like to add my thanks for you and Senator Domenici bringing this together to have a good conversation and continuing the conversation of what our solutions need to be.

We appreciate you two gentlemen in providing your expertise. We hope that you know that this is not the first or the last time that we will be calling on you to help solve this problem.

I think that for our options here in terms of policy, we see a lot of focus on long term because we want to ensure, as Senator Sessions mentioned, that we do not miss these opportunities not just for what we can do immediately but that there is a lot more we can do in the long term that will hopefully eliminate us seeing a repeat of what we are going through right now. But this problem did not occur overnight and it is not going to go away—we are not going to solve it overnight. We have to face that reality.

There are some of us, however, that come from States that are disproportionately low income working families, and they do need immediate relief. You all have mentioned certain things like cold starts, lead foot, tire checking, and other things like that. I am just curious to see if you have any other silver bullets that might be helpful to us, particularly for these low income working families that are getting hit really hard.

I noticed in my State just over the Fourth of July, I took my kids to the lake, and listening to the radio, the radio announcers were pleading with people to please look at their gas gauges because there were so many cars that were on the side of the road out of gas, families who had nothing else to spend. This was their holiday. This was their time with their family, and yet, they were just trying to get home on that last little ounce of gas that they had and could not make it.

So you have got a lot of people in dire straits out there in this country. When we get into talking about solutions, we kind forget that they are choosing between fuel and food and whether their kids are going to get to play Little League this summer, or a whole host of other things. So that, with the increased price of food, we have got a real situation on our hands. So if you have got any other ideas of how we protect low income in this circumstance that we find ourselves in.

Also, if we were to move to an emergency situation, which I think we should, here in the Congress and take this as an emergency situation and begin to look at both the long-term solutions and the short-term solutions, what role do renewables play? We keep saying that is way out there, that is way out there.

I have got an automobile parts plant that is going dormant right now. I mean, how unrealistic is it that we would look to automobile makers that are downsizing and taking plants dormant—can we not look toward maybe the production of greater fuel efficient vehicles, as well as the production of renewable fuel use vehicles, converted vehicles? I had a lot of farmers, when I was growing up, that used propane in their trucks.

How quickly can we move to some of those interim solutions as we look toward increasing our ability to really see a fleet of vehicles that are more dependent or at least somewhat dependent on renewable fuels and the use of renewable fuels?

Mr. YERGIN. First, as you make clear, the abstract numbers about oil prices and share of family incomes do come down to very painful issues for many, many families across the country who are really living every day the oil shock. So I think that goes back to what Senator Bingaman was talking about. The value of an intensive information campaign is both the macro effects in terms of helping to moderate oil prices and the individual family effects of helping people manage their energy budget.

Renewables. I am just in that section of my new book writing the chapter about renewables so I have been thinking very hard about it and the work that we have done on it. I think in a way we are crossing the divide that renewables are going to be a bigger—they will become almost conventional as time goes on, and I think particularly notable is wind, which does not address transportation but really is growing quite substantially.

Senator LINCOLN. It produces electricity.

Mr. YERGIN. Yes.

Senator LINCOLN. If we have electric cars.

Mr. YERGIN. Yes.

So I think that I have never seen so much emphasis on innovation across the energy spectrum, and that includes the renewables. So I think we have to keep in mind the scale of our overall energy system, that you can have dramatic growth and it is still a relatively small part.

On renewable fuels, today about 5 percent of our gasoline is renewable fuels. So if you look at that, a half million barrels a day is in itself a significant number, much higher than it was just a few years ago.

Senator LINCOLN. But is it feasible to think we can speed that clock up? What is the biggest obstacle to speeding that clock up? Delivering it to the consumer, providing the research, getting the automobiles retrofitted or——

Mr. YERGIN. A lot of different technologies are under the heading of renewables. I think it is what has already been addressed in this question, getting to the second or third generation of biofuels, and there is a lot of debate, even in the scientific community, about what the timing of that is going to be. I personally do think that biology will probably play a bigger role in energy 10 years from now——

Senator LINCOLN. Sure. We are looking at algae now as a feedstock.

But what I am asking you is, is there any one thing that you would say or recommend that would speed up the clock of getting us to the idea that I am going to be able to pull up to a pump somewhere and plug in my car or fill up my tank with a renewable fuel that comes cellulosic ethanol or algae or switchgrass or whatever?

Mr. YERGIN. I think it comes down to research dollars and concentration of research dollars and making a lot of different bets rather than just betting on one particular thing. But I think people are awfully motivated to do that.

Senator LINCOLN. So if we could get those speculators to invest in that market, then maybe it might move quicker?

Mr. YERGIN. I think it is some of the same people. The speculators also some of your innovators.

Senator LINCOLN. Can I ask just one last question, Mr. Chairman, just quickly?

The CHAIRMAN. Yes, go right ahead.

Senator LINCOLN. Thank you.

We have seen certainly the sharp increase in the consumption of oil by China and India. Are there any tools in our tool box right now that are available to us to help us address the stress on energy demand on an international level?

Mr. YERGIN. Let me jump in there because I do think that that is a very central question because that is where the dynamo of growth is. I think it is striking that the Chinese themselves have put efficiency at the top of their list for energy. I think over the last couple years, we have observed a shift in how they are looking at it. I think the degree to which we can—it is happening, but intensively tie them into the research and what we are doing in terms of innovation, that is in our interest as well as it is in their interest.

The degree to which—and I think some of this has happened already. The Chinese in particular, but the Indians too, need to feel confident that the kind of international energy security system that exists around the IEA would work for them too, that it is not rigged against them in terms of a crisis. The degree to which the Chinese come and we come to see that we are actually large importing consumers on the same side of the table and have similar interests in stable markets, similar interests in not seeing these kind of prices that we are seeing today, I think that will be beneficial. So it is an economic question. It is also very much a question of our overall relations.

Mr. DIWAN. I can add just one element to that. I totally agree. The question is how do you bring the consumers together to really think about it. In a way, the IEA is a little bit of an odd organization. It has been created 25 years ago as an OECD member. Why the big consumers are not really part and members of that organization? Why do we not transfer the IEA into a real consumer organization which can address these issues with India, China, Brazil inside rather than invited from time to time as guests?

Senator LINCOLN. Thank you, Mr. Chairman.

The CHAIRMAN. All right. Thank you.

Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman.

Mr. Yergin, good to see you. Mr. Diwan, thank you for your testimony. I appreciate, Mr. Diwan, you saying that you think that the market is no longer controlled by supply and demand fundamentals. Mr. Yergin, thank you for dwelling on the asset class issue and talking about the need for more transparency. I appreciate that very much, and I will get to that question.

But I have another question—we have a colleague who says the reason we should drill more is because it will have a psychological effect. The Energy Information Administration said it is not going to have much of an impact before 2030 and not much of a significant impact after that as well. So I am asking you what you think about this notion of whether saying that we are going to drill more would have that psychological effect.

When we opened up Lease 181 in December 2006, which is 6 million acres, a lot of people were saying it was going to be the most promising area for new production. Oil was at $57 a barrel, and we know where it is today. So, obviously, that in and of itself did not have much of a psychological effect.

There were 500 million acres that were recently put out for bid on the Gulf of Mexico, and I think companies bid on 200 million of them. Apparently companies are not ready for more drilling even though prices are high.

So what do you think of this notion of a psychological impact? I will let you start with that.

Mr. YERGIN. I think the word I would use is "expectations," and I think that what happens with supply in the United States is part of this larger picture and larger framework of expectations. So if it appeared that there is the potential of more supply from the United States, as perhaps more supply from other countries, that that would be part of changing this kind of shortage psychology that seems to dominate the market today, which Mr. Diwan described.

Senator CANTWELL. Since there really is not a serious amount of supply in the United States and it is more expensive to get, will lifting the moratoria really have an effect on price?

Mr. YERGIN. I think the answer is we do not know. I think before we mentioned the example of Brazil. Ten years ago when Brazil was talking about opening their offshore, no one contemplated that there might be a new North Sea off Brazil. No one would, I think, speculate today that there is a new North Sea somewhere off the coast of the United States. But truly you do not know until you have done some exploration, and the technological revolution in the offshore is sort of space age. It is very different than it was 10 or 20 years ago.

Senator CANTWELL. I am just really struck by your answer to Senator Bingaman that you could reduce oil demand by 600,000 to 700,000 barrels a day, essentially overnight, here in the United States by simply implementing measures like filling car tires.

Mr. YERGIN. I know. It sounds like tips.

Senator CANTWELL. The 600,000 barrels a day is three times what the Energy Information Administration says we would get in 2030 from lifting the moratoria. This is overnight juxtaposed to something that could take place in 2030. So it seems to me that this notion of some psychological effect is basically a specious argument. Some of our colleagues are trying to sell the idea to people that lifting the moratoria is going to have some immediate effect when we really cannot affect the supply price here much in the United States, given our OCS resources.

Mr. YERGIN. I think I am not familiar with the specific estimates of the EIA. You look at the history of exploration around the world, you see examples where you have $2 billion dry holes off the United States. You also see examples where people are quite surprised to see additional supplies that they did not anticipate. Often when people first discover a field, the reserves are here. As time goes on, the reserve number grows as the knowledge of the field grows.

But I know I would go back to where I started. To me it is not an either/or question. I mean, I think addressing the demand question quickly is extremely important, efficiency. But I think the supply is also part of the picture. We are not going to discover probably a new Persian Gulf off the United States. So it is only going to be part of this overall supply picture.

Senator CANTWELL. Yes, Mr. Diwan.

Mr. DIWAN. If I can just talk a little bit about expectation. It is very difficult to judge expectation. Clearly, if you believe that there will be more oil in 10 years in the United States has a lot less impact as your expectation of oil prices for tomorrow if you believe that we are going to go bomb Iran. So you are constantly looking at the whole range of expectation with some short lead time versus a very long lead time, and it is very difficult to say this has had this impact versus that had that impact. Clearly, when an Israeli minister says bombing Iran is unavoidable, it has a big impact on the oil market versus opening a lease which might produce oil in 10 years. So we constantly need to juggle and understand a little bit how did the market react to these issues.

Senator CANTWELL. What would be the psychological impact of saying to the futures market that we are truly going to have transparency on all U.S. trades?

Mr. DIWAN. I would not know how to answer that.

Senator CANTWELL. You do not think it would have an impact?

Mr. DIWAN. If you——

Senator CANTWELL. Dr. Yergin.

Mr. YERGIN. The question again?

Senator CANTWELL. Do you think saying to the futures market that you are going to have transparency on all U.S. traded oil futures would have an impact on the market?

Mr. YERGIN. Yes.

Senator CANTWELL. Thank you.

The CHAIRMAN. Senator Menendez.

Senator MENENDEZ. Thank you, Mr. Chairman.

Thank you both for sharing your knowledge and for your staying power. I know you have had almost 2 and a half hours of this. So I want to thank you for that as well.

I want to get back to some of your fundamentals so we can put all of your answers in context. You basically have made the case that, as it relates to oil, this is a world market. It is a global market. That means that global production is part of the element. Is that fair?

Mr. YERGIN. Yes.

Senator MENENDEZ. That means that global demand is part of the element.

I would add a third element I think that you have referred to, which is global events, so that if you have unrest in Nigeria or if you have a hurricane in the Gulf, all of those things can affect prices. Is that fair to say?

Mr. YERGIN. Yes.

Senator MENENDEZ. All right. So with that having been said then, the fact is that how you affect these different elements are in some ways on the fringe unless you can have a massive effort either in the demand, reduction, or a massive effort in the production side, or if you could somehow calm the waters in a way that there would never be any uncertainty.

So I think it is because of what you have said about how this is a global context that to some degree explains why even though we opened up Lease 181 about a year and a half or 2 years ago, gas prices still went up. Even though Americans have reduced 800,000 barrels a day as a result of higher gas prices and the Saudis have produced 500,000 barrels more a day, a total shift of about 1.3 million, gas prices have still gone up. So is that a fair way of looking at this set of circumstances?

Mr. DIWAN. Yes. It is really a global picture.

Senator MENENDEZ. So, therefore, the suggestion by some who would have us believe that, for example, opening up the outer continental shelf tomorrow would immediately reduce gas prices today, would be a falsehood, would it not?

Mr. DIWAN. Yes.

Senator MENENDEZ. Now, I think you made comments before that part of our challenge here, another element of this challenge, is that because oil prices were lower during a period of time, investments in the necessary critical infrastructure to both drill, refine, lay the labyrinth of oil lines necessary and do all of the elements of what it takes to bring oil to the marketplace were not made. Is that fair to say?

Mr. YERGIN. They were made but there was a contraction going on, and particularly when you had two price collapses of $10 a barrel. The last price collapse was in 1998 just a couple of years before this huge demand surge started.

Senator MENENDEZ. So the investments did not keep pace ultimately with how this explosion took place.

Mr. YERGIN. That is right.

Senator MENENDEZ. In fact, we saw a lot of the resources by the companies, as they were making significant record profits, in buying back their own stocks, but not necessarily making the rate of investment necessary to pursue the type of production necessary.

Mr. YERGIN. But I think if you look back to that period in 1998–2000 when you had the price collapse, what they were very preoccupied was with downsizing to accommodate what was expected to be a low price environment for some time to come. The high profits that you are mentioning really came when we went into this period of much higher prices and high demand.

Senator MENENDEZ. But it is true that much more was made in buying back stocks than it was in investments, if you look at the relative amounts.

Mr. DIWAN. Buy-back of stocks were quite high when prices really increased, and one of the reasons is actually the lack of investable options for some of these very large companies because they did not have access to these very prolific basins we are talking about. It is a scale issue.

Senator MENENDEZ. Now, because oil is, in fact, sold on the world marketplace, production does not guarantee it will get sold to the highest bidder, generally speaking. Is that not true?

Mr. YERGIN. I am sorry. I did not hear the——

Senator MENENDEZ. Because oil is a world market, is production largely not sold to the highest bidder?

Mr. YERGIN. Yes.

Senator MENENDEZ. So if that is the case, and then we also look at the Energy Information Agency talking about the 68 million acres that is out there, I mean, I would say that, first, they do some survey—the Minerals Management Agency does some survey of this to give some sense of what is the opportunity. Of course, companies pursue what they believe is a reasonable opportunity. As you say, there may be some dry wells, but there is also the expectation that they will find opportunities. People just do not buy up leases for the sake of buying leases. Is that fair to say?

Mr. YERGIN. They acquire sort of public data and, on the basis of that, decide they will bid here and not there. Then if they win the lease, then they go through a much more extensive period of analysis.

Senator MENENDEZ. Is not cheaper to drill on land than it is offshore?

Mr. YERGIN. Yes.

Senator MENENDEZ. Now, finally, let me ask you two last questions. Is it not critical, in order for us to deal with this longer-range issue that you both talked about as part of it, that demand reduction, Dr. Yergin, you said could be probably the single most significant thing we can do in the short term, but in the long term, as we look for renewables, is having the tax incentives necessary to bring these renewables to the commercialization aspect not a critical element of meeting this challenge?

Mr. YERGIN. I think without the incentives that we have had sort of on and off since 1974 for renewables, I do not think we would see the renewable industry where it is today.

Senator MENENDEZ. In fact, creating a greater stability of understanding that those incentives are going to be there over the longer term would, in fact, help us commercialize a lot quicker. Would that not be true?

Mr. YERGIN. Are you talking about——

Senator MENENDEZ. The stability of the tax incentives.

Mr. YERGIN. I think, in general, stability of a tax regime in any branch of the energy industry promotes investment.

Senator MENENDEZ. Finally, the Securities and Exchange Commission has a proposed rulemaking that would allow oil companies to report reserves where they have not done any test wells. It also creates new classes of "potential reserves" and not just having oil companies report proven reserves.

My question would be would this rule not make the leases that oil companies hold, but are not producing, more valuable?

Mr. DIWAN. What you have right now in a way is oil companies keep two books of reserves, the official SEC one and the one that they look at what is potential. I mean, you drill two wells. You find oil in both of them, and you know there is oil in the middle. You cannot book it under the SEC rule. Oil companies know there is oil in the middle. So they book it internally and they plan their next well. So what the SEC rules are doing in a way is coming closer to how the industry itself looks at its reserves.

Senator MENENDEZ. But clearly, there is——

Mr. YERGIN. Senator, could I——

Senator MENENDEZ. Yes, Dr. Yergin.

Mr. YERGIN. That adjustment by the SEC is absolutely on target because basically the rules for—this all goes back to what you are talking about now about understanding the financial markets. The rules for reserves were created in the 1970s so that, among other things, we would have a better sense as a country of what is our reserve base, and then it was also adapted for the uses of investors. The thing is that the techniques that were used were the techniques of the 1970s when the deep water frontier was 600 feet, and today it is 12,000 feet. So what the SEC is basically doing is modernizing a set of rules that were outmoded by vast changes in technology.

Senator MENENDEZ. I appreciate your answer, but could you answer the other part of the question? Will that not ultimately improve the value of that company's stocks by virtue of that reporting?

Mr. YERGIN. You said stocks or their ability to book reserves?

Senator MENENDEZ. Stocks.

Mr. YERGIN. Yes. Since investors judge oil companies and gas companies by their reserves and if their reserves capture what is there with modern technology, that would enhance their value.

Senator MENENDEZ. But that would do nothing, in fact, however, to necessarily increase supply.

Mr. YERGIN. It would do two things. One, it might increase their foundation for investment. Second, it meets the needs of investors by giving them a more accurate view of the companies.

Senator MENENDEZ. That would presume, however, that the investment would flow, that the moneys would flow, that the new higher stock price would flow not to create dividends but to plow back into investments.

Mr. YERGIN. I think like all companies, they have their obligations to do both. I think the point that Mr. Diwan made is a really important one and it goes back to this 80 percent of the world's resources are controlled by national oil companies. On a global basis, this question of access is critical for helping to bring on an investment into new resources.

Mr. DIWAN. I agree. I mean, just to come back to your question on the value of the company, a lot of the American companies who are ruled by these SEC rules, I mean, literally keep two books, one, in view of the technology that we have today, and often the analysts and the investors know these numbers. So there is not a huge discrepancy, if you want, with what they are putting in the SEC and what is known of their own reserve. So often people investing in these companies know what the company thinks about its own reserve even if it is not the way the SEC books it.

Senator MENENDEZ. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much.

Senator Whitehouse, you are the final Senator here who has not had a chance to ask some questions. I know Senator Domenici wants to make a statement. Maybe Senator Conrad or Senator Murkowski have other questions. But go ahead.

Senator WHITEHOUSE. I appreciate it, Mr. Chairman, and I thank you and the ranking member for allowing people from outside the committee to participate in this important hearing. It is a very nice thing.

I just wanted to ask the two witnesses, given the emphasis on conservation, given the questions and the figures that Senator Cantwell had, what advice would you have for us as a Congress as to ways to increase conservation and encourage greater conservation? I do not see us policing the tire inflation of America's drivers. What are the best ways? Have you thought of ways for us to try to get our hands around the conservation opportunity, and what are the best recommendations that you have?

Mr. YERGIN. Obviously, Senator Conrad went through the list of things that you have done. I think it would be a question of examining, indeed, in the area of incentives, regulations, technology, just what are the panoply of things that can have an impact. The problem with conservation, the biggest single issue, is it not a thing. It is so diverse. So it is really how do you get the signals and the directions to move there.

Now, obviously, we recognize price is one way to do that.

So I do not have a list of specific things to do. I did mention just these short-term measures that have an impact. But I presume that this committee has looked at that and would say that is something to really kind of focus on, what is the inventory. If we just think about inventory of resources, what is the inventory of efficiency resources that we have.

Senator WHITEHOUSE. If you have a chance to, I would be delighted if you followed up on that after the hearing. It is something worth thinking a lot about.

Mr. YERGIN. I should say that we, within our company, have created a group that is trying to focus on how do you capture the efficiency potential that I think we are all convinced is there.

Senator WHITEHOUSE. Just one last quick question. I do not know. This may be a very quick answer. A measure of the run-up in oil prices for the U.S. has been the decline in the value of the dollar. As the dollar falls, oil prices increase. As oil prices increase, it has a weakening effect on the economy. The weakening effect on the economy can, in turn, cause the dollar to slip further. There is a potential negative feedback loop that could develop there, and I am wondering how robust you feel that negative feedback loop is, or are there enough off-ramps on it that it is not something we need to worry about?

Mr. YERGIN. Yes, I would just say that I think you are absolutely right. What is the opposite of a virtuous circle?

Senator WHITEHOUSE. Vicious cycle.

Mr. YERGIN. A vicious cycle. That is partly getting into a cycle of stagflation, but I think that that is what we are actually seeing today and you see the divergence between the Federal Reserve and the European Central Bank and how they are kind of addressing these questions. So it does reinforce itself, and that is part of the reason, you know, the severity of this oil shock we are in and the kind of risks that we are carrying.

Senator WHITEHOUSE. Conservation would help interrupt that negative feedback cycle.

Mr. YERGIN. Absolutely.

Mr. DIWAN. In the short term, if I can add to that, I think this is the key driver of oil prices now. It is the perception of what the central bankers are doing about inflation. That is the most important fundamental in the driver of prices. This distinction we have what the central banks in Europe and the U.S. are doing, where we are fighting inflation in Europe and we are trying to promote growth here, is creating the further weakening of the dollar and further money coming to the oil complex. That is a very powerful cycle which has established itself in the last year.

Mr. YERGIN. If you look at gold, if you look at the other commodities, exactly what Mr. Diwan is describing, you have an inflationary cycle. Now, if you are outside the United States, you have a very strong sense of everywhere people are preoccupied with inflation. That is a time when commodity prices go up also.

The CHAIRMAN. Senator Domenici, did you have a statement you wished to make here? I know Senator Murkowski has a question. Maybe Senator Conrad has a question.

Senator DOMENICI. I have a combination observation and question.

I would be remiss if I did not, once again, thank you both. We are pretty fortunate as a group—we, Senators—to have somebody of your quality give us a whole morning. I have not been here all morning. So I do not know what torture you have been through, but you both are smiling. So it must not have been too bad a morning.

I have come to the conclusion that right here at the end of this year with the President lifting, by executive order, the executive moratorium on all of the offshore lands, coastal lands of America, and giving the Congress an opportunity to do likewise in whole or in part—it seems to me we can talk all we like about speculation and we can debate speculation on the floor.

But I sense that the policy decision that we ought to make is to open as much of that offshore to production, and some of the American people are putting it in very simple language. They want some drilling on American property that is not taking place now. They do not even want us to use the sophisticated words of exploration. They say, drill. So I think we are free to use the word now. We were all scared of it 6 months ago, but it looks like Americans are saying that in larger and larger numbers.

I am not trying to talk like I know the answer to this problem. This is the worst economic problem America has ever had in my 36 years. I think it is capable of destroying us. It is capable of making us poor. If we have to do it at a full-blown high level, $500 billion to $700 billion a year for 8 or 9 years, I do not think we can make it. I think something will happen. I am not going to ask you all that. I just will be satisfied in my own mind that it is a very big problem.

I think we ought to go after the offshore and the Alaskan that is available right now with a vengeance, and we ought to pass whatever is necessary to open it up and see what happens.

Now, let me just stop for a minute and say, am I being irrational as I look at what is coming in and have worked on this for so long, passed three very important bills? You know that. They are the important ones in the last few years. All three are the result of Senator Bingaman and Domenici working together. We had other Senators, obviously, but we did CAFE. We have done all the things we should have done 20 years ago. We have done them.

The price is so high that between all of them, we are conserving like hell. I mean, we have never had such a big conservation effort without it being mobilized. Senators are talking about mobilizing it. It is taking effect. The price plus the things we put into law are causing us to lower dramatically our use. It could come down more.

But I ask you, am I on the wrong track in saying let us proceed to get some of these properties released so they can put them out to bid and get started with the world knowing they are open?

My whole goal is to pass laws up here that can say to you two men—you are writing your second book and you are saying, well, where are the new supplies? You can at least start with saying America has opened up the offshore and it is open. It is going to be used sooner or later here. I think it would be an important adjunct to anybody's analysis of where we are and what we ought to do. Am I mistaken or not?

I want to say just before that, you have all told us—if 200,000 barrels of Nigerian available got all messed up in a war, you tell us it has an impact on the market. Why would 200,000 barrels of new oil and X million cubic feet of gas that are going to be put on the market by America on American property not have an impact on the price, as would the Nigerian situation with 200,000 barrels?

Mr. YERGIN. As I have tried to say, I think that a responsible further development of the OCS or part of the OCS is part of the overall picture. That is, it is supply and demand. We have got to look at both of them.

I do not think that you are irrational at all in the larger concern that you are expressing. I mean, you have been through several of these cycles now, Senator. You know, wherever we are now, the risks of this could be worse. We could be looking at a worse situation. You can just go down the checklist of risks. There are a lot of them there today. So I do not think any of us would want to say you are irrational.

Senator DOMENICI. What do you think?

Mr. DIWAN. We have been saying that we need to increase supply, and we need to increase supply everywhere. So I do not see how we can ask certain countries to do it only for us. We can decide the environmental standard we want to impose on these leases. We can change them. We can tighten them if need be. But increase supply globally is a good thing and globally includes the United States.

Senator DOMENICI. I am going to close by stating in the record there is a new observation taking place by some Senators, and I am not being critical of them. That is good. They think they have found something here. They say these people that have leases, all these companies that have leases on the offshore, are going to either have to use it or lose it. I want to state for the record one more time they are subject to a "use it or lose it." I see you nodding affirmatively. Every one of those leases says they are either for 5 years or 8 years or 10 years. In the lease, it says if you do not start producing by the terminal date, you lose the lease. So that is a "use it" already. We do not have land out there that they can hold indefinitely and not use. They have to use it by the date on the lease or they lose it. So what we do is we have them out there doing the best they can to analyze.

They just bid a bid on one piece of the offshore which must have hit both of your laptops with a pretty big bang, and that was the biding that was put forth on that little piece of property that we opened off of Florida. That was the highest bids we have had for any American leases in history. So they must think there is oil and gas there. Somebody says, why are they not producing it? They did not buy it to lose it. They are going to do it.

Mr. YERGIN. Also, one has to remember there are lead times here. There is a clock ticking, but you have to mobilize. You have to get the drill ships. You have to do the research. You have to do the seismic and all of that.

Senator DOMENICI. Thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Murkowski, why do you not go ahead?

Senator MURKOWSKI. A very quick question. Gentlemen, again, I appreciate your endurance.

I have suggested that if the Congress were to lift the decades-old ban on ANWR and open that up for exploration and production, that even though the time for development may be 8–10 years off, that there would be a psychological impact to the market, that that would be a signal that increased production is on the way.

Senator Cantwell in her comments to you kind of challenged you on the aspect of the psychology, and you spoke to maybe it is psychology, maybe it is expectations.

A couple of days ago when President Bush lifted the ban on OCS development, 2 days after his announcement, the prices of crude fell by $9.26 or 6.3 percent. What is that? Is that psychology? Is that expectation? I mean, what happened there? Am I right or is Senator Cantwell right? Or are you guys right?

Mr. DIWAN. I think it is very difficult to assign one cause for oil prices dropping like that over 2 days. I can come up with 20 different reasons, including the announcement that the United States will be negotiating directly with Iran. We can also look at what happened on the broader market and the fact that you had a very big sell-off, and some of these financial players had made money on oil and really needed cash to pay off what they were losing on the other side. So we can come up with 10 or 15 reasons. Somebody like me who has been looking at oil markets for very long has a lot of trouble to accept there is one reason why thousands of people are going to do exactly the same thing at the same moment, selling oil.

Senator MURKOWSKI. But he makes an announcement and it drops by almost $10. Is that the signal that the market was looking for that there might be increased production and we respond to that? Is it psychology? Is it expectation? What is it?

Mr. DIWAN. No, it is not. I think announcing that Bill Burns was going to Switzerland to talk with the Iranians had a much bigger impact on the market than announcing that.

Senator MURKOWSKI. Do you agree with that, Dr. Yergin?

Mr. YERGIN. Yes. I think that also probably over the last couple of days, that sell-off, that sort of pessimism about the U.S. economy was a big factor.

Senator MURKOWSKI. So it is a combination.

Mr. YERGIN. It is a combination. It is all of the above.

Senator MURKOWSKI. So we are all right.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Conrad.

Senator CONRAD. I think that is the truth.

[Laughter.]

Senator CONRAD. First of all, I want to thank very, very much the chairman of this committee and the ranking member for organizing this. A special thanks to Senator Bingaman, the chairman of the Energy committee, for really two outstanding witnesses. I do not know how many Senators we had here. I think more than 30. Perhaps as many as 40 Senators were here.

Some of us had hoped that we would have an actual time out in the Senate for a thing like this because we had competing hearings going on while Senator Bingaman was conducting this workshop. I know committees on which I sit were meeting. I wish we would have had a time out so that others could have been here because this is exactly what we needed to hear.

To the witnesses, we want to thank you for really I think outstanding presentations, and we are very fortunate to have people of your quality who are willing to take some time to be here to answer our questions.

I thought, Mr. Diwan—is that the correct pronunciation?

Mr. DIWAN. Diwan.

Senator CONRAD. Diwan. Thank you. Mr. Diwan, at one point you talked about speculation, but you talked about at the heart of this is that over the last period of time, we have encouraged consumption and we have discouraged production. That takes us to where we find ourselves today. We have encouraged consumption. We have discouraged production. I mean, we have actually had tax credits to encourage people to go buy Hummers. What a bizarre policy that was. We had tax credits to encourage people to buy Hummers that give 8 miles a gallon or whatever it is. At the same time, we have held places were off limits to production.

While it is obvious that we are in a global market and what we do on both of these equations will not be central to the overall equation, you also said that our fuel efficiency is one-half of Europe. It just seems to me it is so abundantly clear that we should work both sides of this equation. We should affect what we can affect. We should have more production. We should allow more access to this resource, and we should conserve more. We should accelerate what we did on CAFE standards last year to increase fuel efficiency because we are way behind. We are way behind.

You indicated we are consuming half of the world's gasoline, Mr. Diwan, as I recall. You said your conclusion was it is us. It is us. We are the ones who are in charge of our own destiny. I hope very much the message that comes out of this is as clear as your testimony has been because as I have heard you say it, yes, speculation is part of what is occurring here, that we have a whole new series of actors that have come to this market with deep pockets who have put pressure on prices in the short term.

But it is also true that we have had a set of policies that have discouraged production and encouraged consumption, and we have to reverse those. Did I hear you correctly?

Mr. DIWAN. Yes.

Senator CONRAD. Dr. Yergin, do you agree with that prescription, that we have got to reverse the longstanding policies we have had here to discourage production and encourage consumption, that we have got to go in just the reverse, that we have now got to encourage production and discourage consumption?

Mr. YERGIN. Yes.

Senator CONRAD. I do not know what could be more clear.

Some of our colleagues just want to play on half the ball field. I mean, in both parties, I hear people that just want to deal on the consumption side and others who just want to deal on the production side. As far as I am concerned, both of them have it half right. Both of them have it half right.

What we need is to get a strategy and a plan that deals with both sides of the equation. Now, maybe that is too simplistic, but it seems to me kind of basic. I think the testimony of you gentlemen has been about as clear as it can be. I appreciate it very much.

I thank the chairman.

The CHAIRMAN. Let me just also thank both of you. I think it has been very good testimony, very informative. I think a lot of Senators obviously have a vital interest in trying to find reasonable solutions, and I think you helped us. So thank you all very much.

Why don't we conclude our workshop with that? Thank you.

[Whereupon, at 11:55 a.m., the workshop was concluded.]

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